



San Luis Obispo Council of Governments

Draft
Chorro Valley Trail Study
Existing Conditions, Opportunities and Constraints Report



March 2014



Chorro Valley Trail Study

Existing Conditions, Opportunities and Constraints Report

Prepared for
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Council of Governments**
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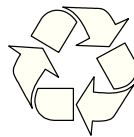
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This report produced on 50% recycled paper with 50% post-consumer content.

Introduction

Purpose

The Chorro Valley Trail Study is intended to assess the feasibility of building a trail for bicyclists and pedestrians through an approximately 12-mile corridor between the cities of San Luis Obispo and Morro Bay. This trail would traverse the Route 1 – SLO North Coast Scenic Byway, providing connections to key points such as California Polytechnic State University San Luis Obispo (Cal Poly), Camp San Luis Obispo (Camp SLO), Cuesta College, and El Chorro Regional Park. Consistent with the federal Scenic Byway grant that enabled this study, the Chorro Valley Trail would fulfill the multi-modal objectives of the Byway’s Corridor Management Plan. After publication of this feasibility study, the San Luis Obispo County Parks Department will be responsible for developing a master plan, including programmatic environmental review, for the trail.

Study Area

To conduct a feasibility assessment, the Chorro Valley Trail Study focuses on a study area bounded by Highland Drive to the east and South Bay Boulevard to the west. These boundaries adjoin existing bicycle paths in the cities of San Luis Obispo and Morro Bay. Figures 1a through 1f, a series of six contiguous Trail Alignment maps, show the location of the potential trail alignments with respect to important land uses and features in the study area.

Organization of Report

This report documents existing environmental conditions within the study area, including the full range of issues covered in the California Environmental Quality Act (CEQA) checklist. Special emphasis is placed on those environmental issues which are likely to have physical impacts. For such issues, as listed below, the report engages in further analysis of opportunities and constraints for building the Chorro Valley Trail.

- Traffic/User Safety
- Utilities/Service Systems
- Agricultural Resources
- Biological Resources
- Hydrology (Drainage, Erosion and Sedimentation)
- Geology and Soils
- Cultural Resources
- Hazardous Materials

Based on the analysis of opportunities and constraints, this report qualitatively evaluates the level of environmental constraints for each potential trail alignment. The Constraints Matrix on page 67 summarizes this information in a color-coded, tabular format.

CHORRO VALLEY TRAIL STUDY

Trail Alignments
FIGURE 1A



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C
- Additional Alignment Considered

Existing Bikeways

- Class I Bikeway
- Class II Bikeway

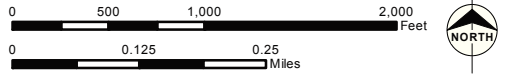
Alignment Symbols

- Segment Start/Stop
- Small Drainage Crossing
- Large Drainage Crossing
- Trail Overpass
- Trail Underpass
- Bridge (Maintained by County)
- Bridge (Maintained by State)
- Signalized Intersection selection
- Road Crossing
- Railroad Crossing
- Post Mile Marker

THIS MAP IS NOT A TRAIL GUIDE

This map is a preliminary planning tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the routes or staging areas identified on this Map are simply proposed for further study and are not open to the public for any purpose. This map does not convey any right to the public to use any trail routes shown, nor does it exempt any person from trespassing charges.

REFERENCE

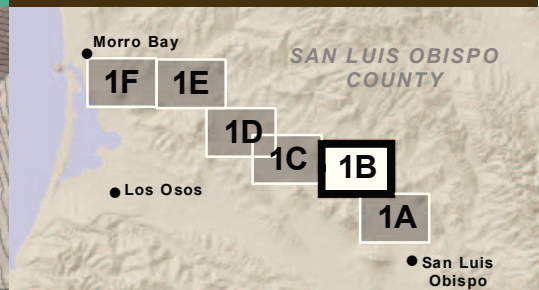


Map Sources: Data provided by San Luis Obispo County Public Works and Transportation Department, 2009, Caltrans, 2013, Eugene Jud and Cal Poly, 2009, ESRI, 2014, County of San Luis Obispo Office of Emergency Services, 2011, and the California Protected Area Database, 2013.



CHORRO VALLEY TRAIL STUDY

Trail Alignments FIGURE 1B



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C
- Additional Alignment Considered

Existing Bikeways

- Class I Bikeway
- Class II Bikeway

Alignment Symbols

- Segment Start/Stop
- Small Drainage Crossing
- Large Drainage Crossing
- Trail Overpass
- Trail Underpass
- Bridge (Maintained by County)
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REFERENCE

0 500 1,000 2,000 Feet

0 0.125 0.25 Miles

Map Sources: Data provided by San Luis Obispo County Public Works and Transportation Department, 2009, Caltrans, 2013, Eugene Jud and Cal Poly, 2009, ESRI, 2014, County of San Luis Obispo Office of Emergency Services, 2011, and the California Protected Area Database, 2013.

CHORRO VALLEY TRAIL STUDY

Trail Alignments
FIGURE 1C



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C
- Additional Alignment Considered

Existing Bikeways

- Class I Bikeway
- Class II Bikeway

Alignment Symbols

- Segment Start/Stop
- Small Drainage Crossing
- Large Drainage Crossing
- Trail Overpass
- Trail Underpass
- Bridge (Maintained by County)
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- Signalized Intersection selection
- Road Crossing
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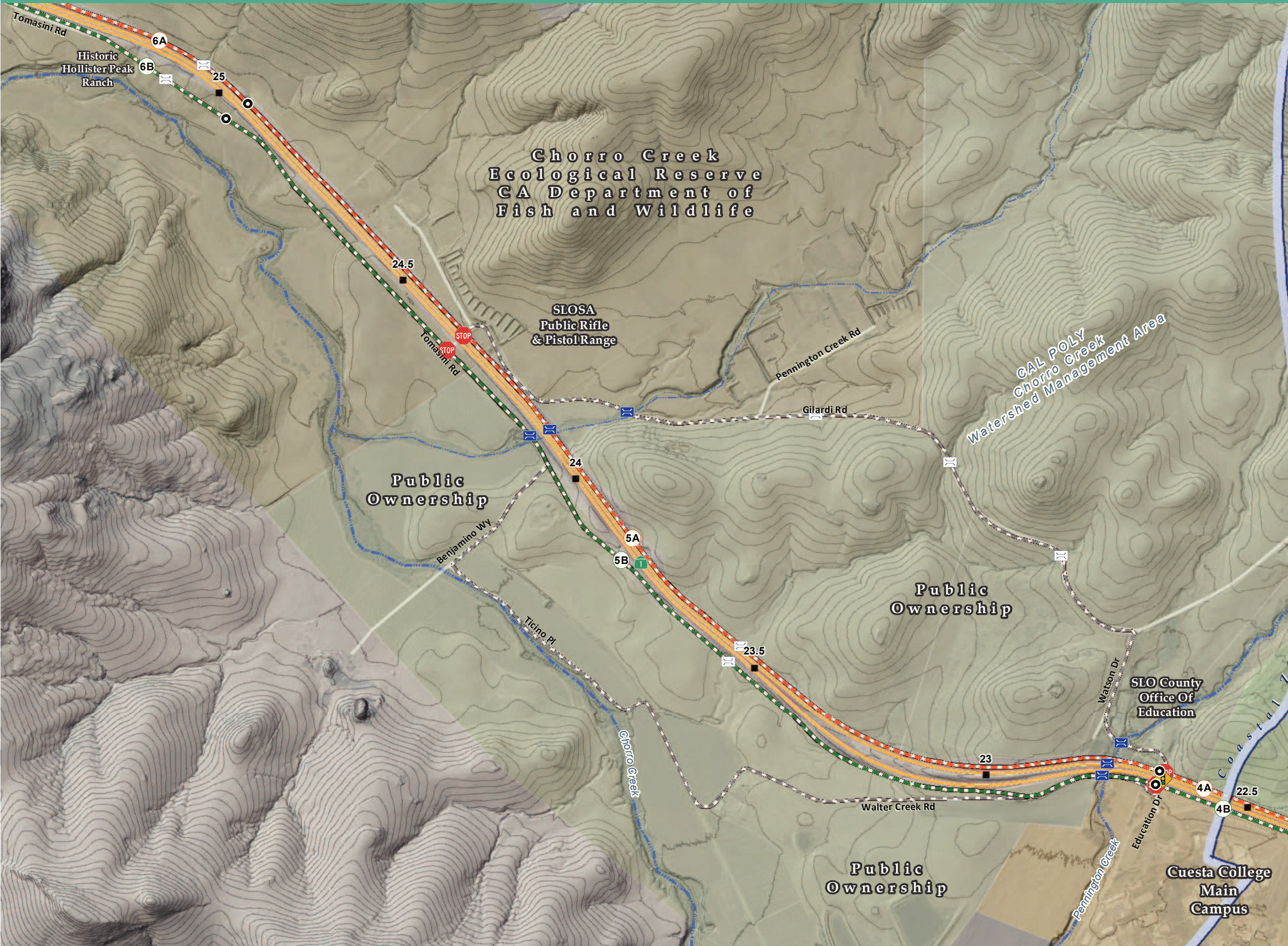
REFERENCE

0 500 1,000 2,000 Feet
0 0.125 0.25 Miles

Map Sources: Data provided by San Luis Obispo County Public Works and Transportation Department, 2009, Caltrans, 2013, Eugene Jud and Cal Poly, 2009, ESRI, 2014, County of San Luis Obispo Office of Emergency Services, 2011, and the California Protected Area Database, 2013.

CHORRO VALLEY TRAIL STUDY

Trail Alignments
FIGURE 1D



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C
- Additional Alignment Considered

Existing Bikeways

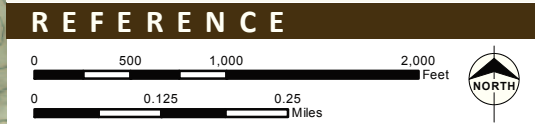
- Class I Bikeway
- Class II Bikeway

Alignment Symbols

- Segment Start/Stop
- Small Drainage Crossing
- Large Drainage Crossing
- Trail Overpass
- Trail Underpass
- Bridge (Maintained by County)
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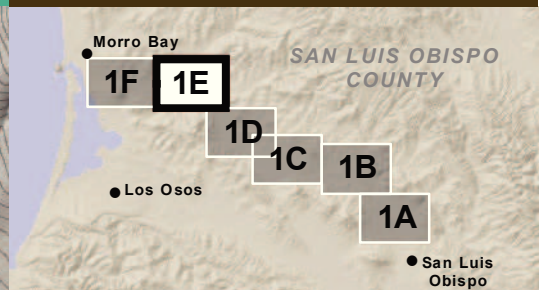
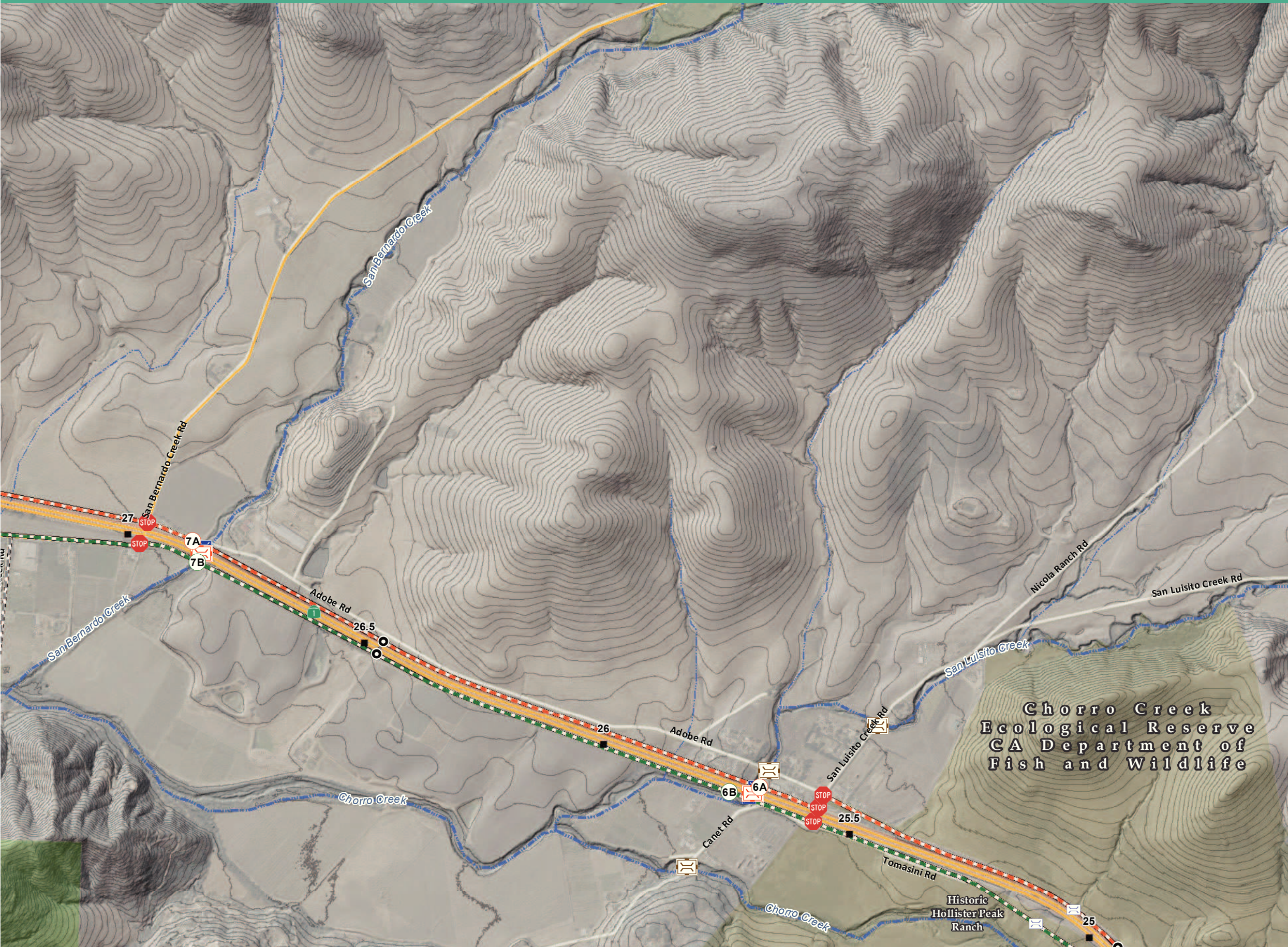


Map Sources: Data provided by San Luis Obispo County Public Works and Transportation Department, 2009, Caltrans, 2013, Eugene Jud and Cal Poly, 2009, ESRI, 2014, County of San Luis Obispo Office of Emergency Services, 2011, and the California Protected Area Database, 2013.



CHORRO VALLEY TRAIL STUDY

Trail Alignments FIGURE 1E



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C
- Additional Alignment Considered

Existing Bikeways

- Class I Bikeway
- Class II Bikeway

Alignment Symbols

- Segment Start/Stop
- Small Drainage Crossing
- Large Drainage Crossing
- Trail Overpass
- Trail Underpass
- Bridge (Maintained by County)
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REFERENCE

0 500 1,000 2,000 Feet
0 0.125 0.25 Miles

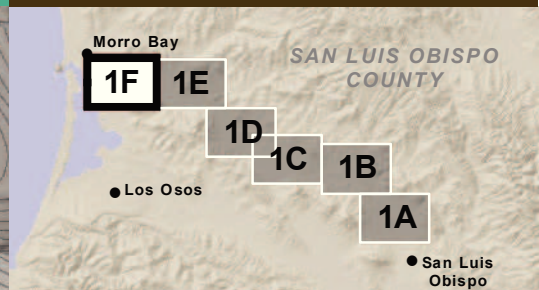
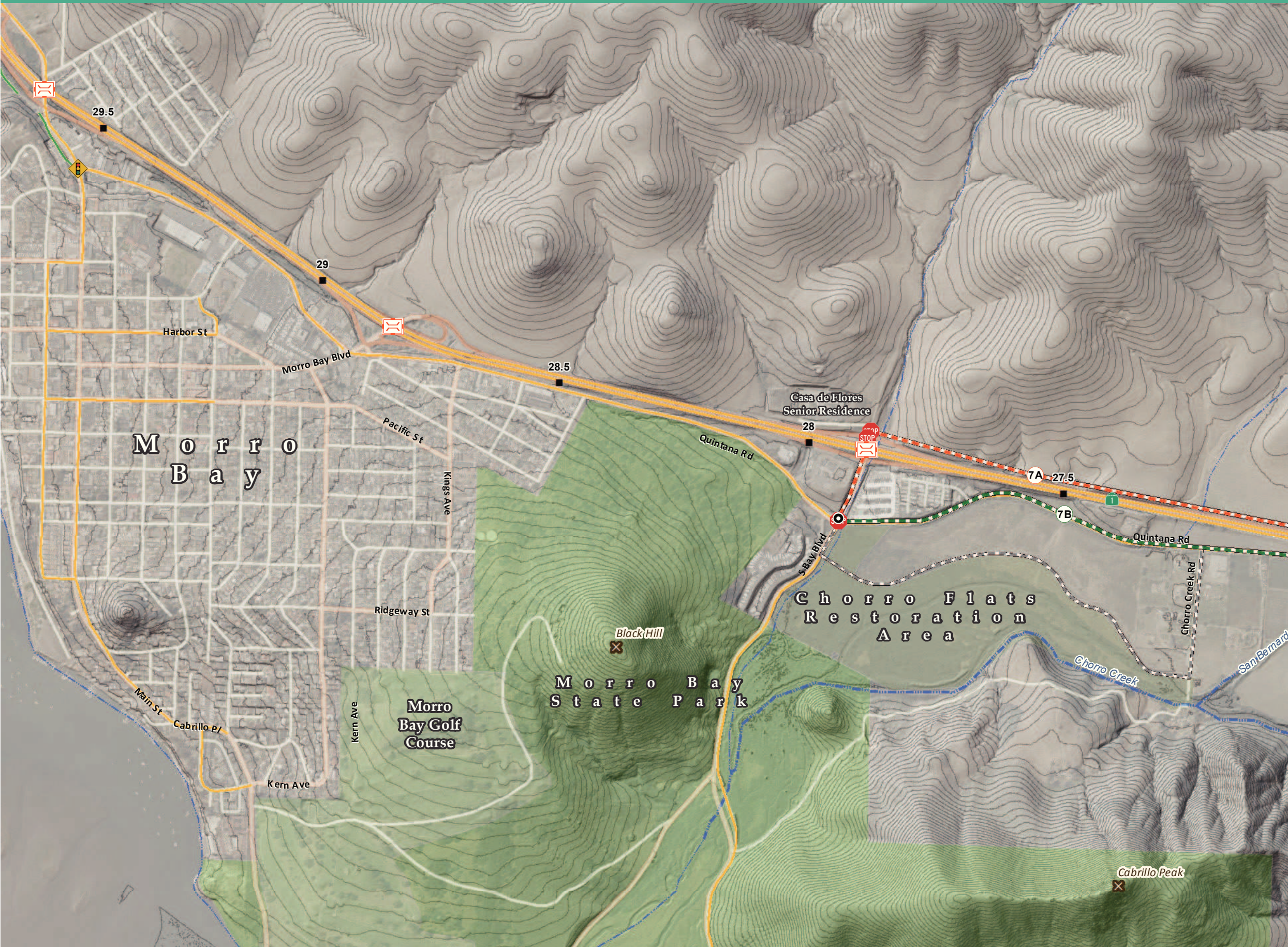
Map Sources: Data provided by San Luis Obispo County Public Works and Transportation Department, 2009, Caltrans, 2013, Eugene Jud and Cal Poly, 2009, ESRI, 2014, County of San Luis Obispo Office of Emergency Services, 2011, and the California Protected Area Database, 2013.

SLOCOG
San Luis Obispo County Office of Emergency Services

QUESTA

CHORRO VALLEY TRAIL STUDY

Trail Alignments FIGURE 1F



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C
- Additional Alignment Considered

Existing Bikeways

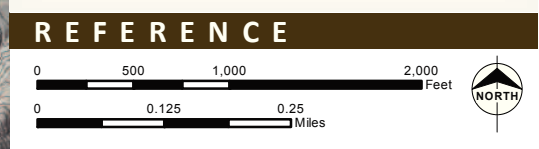
- Class I Bikeway
- Class II Bikeway

Alignment Symbols

- Segment Start/Stop
- Small Drainage Crossing
- Large Drainage Crossing
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In preparation of this report, a wide range of documents were reviewed, including but not limited to County planning documents; master plans and environmental documents pertaining to properties in the trail corridor; databases of biological, cultural, and hydrological resources; interviews with landowners; and GIS mapping data. Several field visits also were conducted to characterize existing environmental conditions in the study area.

Landowner Interests

As shown by Figures 1a through 1f, large institutional and public landowners occupy much of the study area. Cal Poly has substantial agricultural landholdings in the eastern and central portions of the study area. Other important landowners include the California Men's Colony, Camp SLO, Cuesta College, the California Department of Fish and Wildlife, Caltrans, and San Luis Obispo County (at El Chorro Regional Park). Private farmland is located along the western portion of the study area between the Chorro Creek Ecological Reserve and South Bay Boulevard.

To engage important landowners in the study area, a series of meetings was conducted in January and February 2014 with officials from Cal Poly, Camp SLO, the Men's Colony, Caltrans, the Department of Fish and Wildlife, and the Coastal San Luis Resource Conservation District. In addition, SLOCOG hosted an open house on February 18 for private landowners in the vicinity of the study area and a workshop for the general public on April 15. Collectively, the concerns of landowners revolved around the following issues:

- Conflicts with agricultural operations;
- Trespassing by trail users;
- Traffic safety;
- Opportunities for safety improvements;
- Opportunities for habitat restoration;
- Prisoner security;
- Protected species; and
- Responsibility for trail operation and maintenance.

The meetings with landowners also shaped the selection of potential trail alignments shown in Figures 1a through 1f. Originally, Cal Poly students enrolled in a Sustainable Mobility course taught by Professor Eugene Judd envisioned multiple trail alignments in 2009 and 2010. Some of these original alignments were screened out as infeasible based on landowner input and adherence to the objective of providing a direct route for bicyclist commuters; such alignments are displayed in the preceding figures as "Other Alignments Considered."

Primary Environmental Issues

Traffic/User Safety

Through the study area, California State Route 1 (Highway 1) provides access to motorized vehicles and bicyclists between the cities of San Luis Obispo and Morro Bay. Based on traffic counts provided by Caltrans for the year 2012, Highway 1 has an annual average daily traffic (AADT) of 25,600 between Highland Drive and the Men's Colony, 18,300 AADT between the Men's Colony and the entrance to Camp SLO, 20,100 AADT from there to Cuesta College, and 16,600 AADT to Baywood Park Road (South Bay Boulevard)


(Caltrans, 2013). As a scenic byway corridor, this portion of Highway 1 also is popular for long-distance bicycling on California's Central Coast (SLOCOG, 2007). According to the Scenic Byway Corridor Plan, the shoulders of Highway 1 to the south of Hearst Castle are generally adequate for cycling and vary between eight to 10 feet.

Nonetheless, a primary objective of the scenic byway is to improve off-highway access for cyclists and pedestrians, as an alternative to using the shoulders of Highway 1. The Scenic Byway Corridor Plan states that between Cal Poly and Cayucos, the corridor is planned to have Class I (separated) paths. It should also be noted that several underpasses of Highway 1 in the Chorro Valley accommodate local traffic, including agricultural equipment and military vehicles.

This section discusses existing conditions and potential constraints related to traffic safety, existing roads and rights-of-way, and user safety issues.

Environmental Setting

Traffic Safety. The Chorro Valley Trail is intended to serve different types of users, and to provide continuous access for bicyclists and pedestrians traveling the length of the corridor. Currently, there are almost no facilities for pedestrians, and limited facilities for bicyclists in the study area. Class I (separated multi-use path), Class II (striped bicycle lanes with sidewalks), and Class III (signs) facilities are limited and discontinuous. A Class I pathway occurs for several blocks on Highland Drive between California Boulevard and Santa Rosa Avenue (Highway 1). Further south on California Boulevard, the Railroad Safety Trail provides separated facilities for pedestrians and bicyclists. Within Cuesta College, sidewalks and striping provide internal access. In Morro Bay, Class II bike lanes have been created on Quintana Road west of South Bay Drive, but there are no pedestrian facilities.



EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Bicycle travel between the Morro Bay-Cayucos area and San Luis Obispo on Highway 1 is designated as part of the Pacific Coast Bike Route. As the name implies, the Pacific Coast Bike Route provides a cycling route from British Columbia to Baja California, mostly along Highway 1. This is a very popular route for dedicated cyclists who ride long distances along the Central Coast. The route draws cyclists from throughout California and the entire Country, as well as from around the world. As stated in the Scenic Byway Corridor Plan, improving the highway for these users is an important goal for both safety and access.

Currently, bicyclists must ride on the approximately eight-foot-wide paved shoulder of Highway 1 between these communities (and other points to the north and south). Since this shoulder riding area is not signed or striped, it does not constitute a Class III Facility. As a conventional highway, nonmotorized traffic (including pedestrian use) is not prohibited, but few pedestrian facilities (crosswalks, sidewalks, signals, etc.) exist within the Study area.

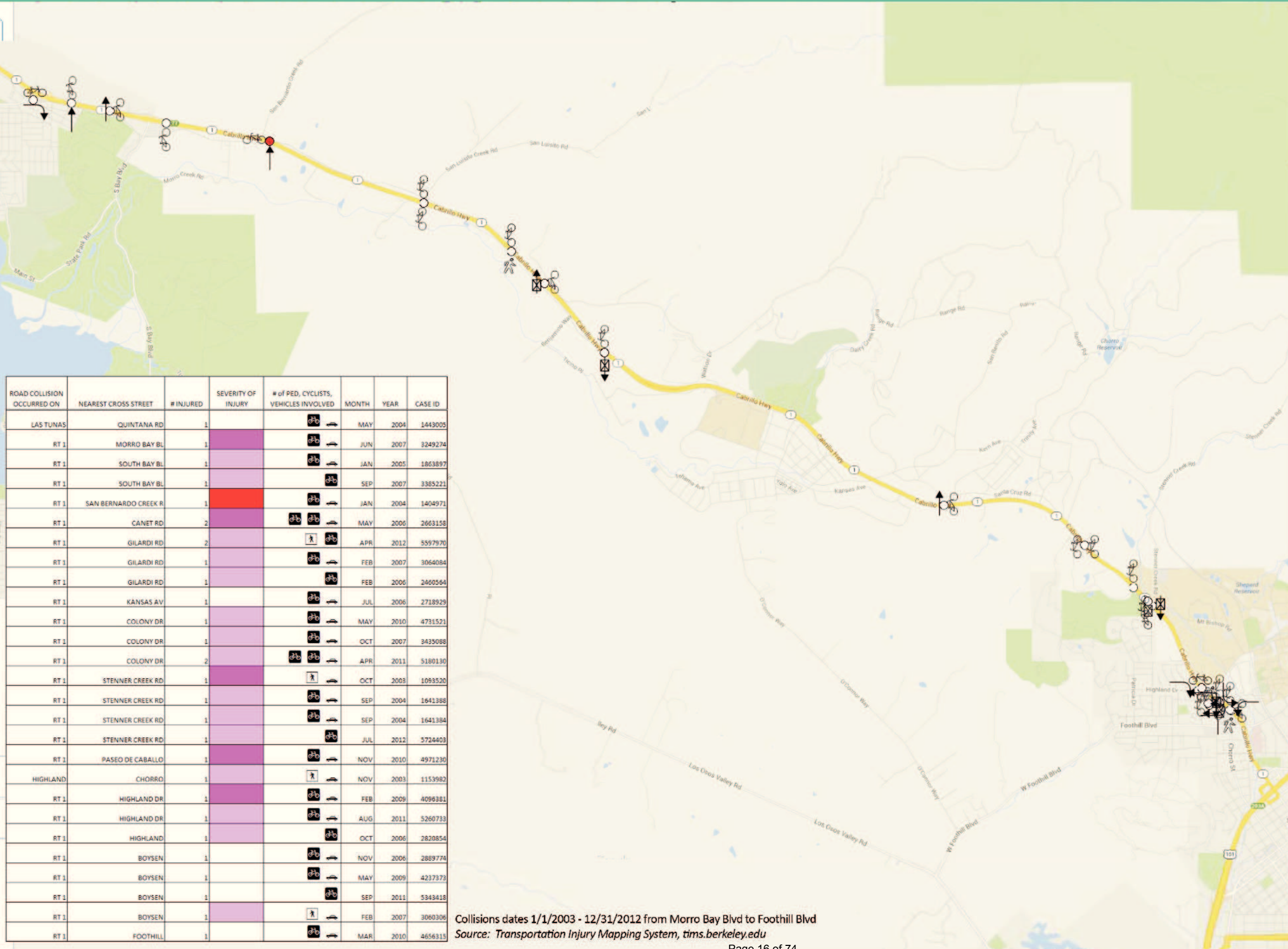
There are limited statistics on the number of daily and weekend riders that use this portion of the Pacific Coast Bike Route (the Highway 1 shoulder); however, it is likely accommodates between 50 and 100 daily weekend riders (or more) during the good weather periods of the spring, summer, and fall months, and between 10 and 50 daily riders at other times. For comparison purposes, and as noted in the Morro Bay Bicycle and Pedestrian Master Plan, there were approximately 140-150 bicycle riders counted on Main Street (which parallels HWY1 one block away) at the bridge over Morro Creek on a weekend day in late May 2011, while weekday bicycle use at this location ranged from 40-120 riders. In addition to these “through” riders, there are riders who travel between San Luis Obispo and Los Osos via South Bay Drive, and students who commute by bicycle from San Luis Obispo to Cuesta College during the school year. Furthermore, there are special event rides that may draw several hundred riders that use local streets in addition to use of the Highway 1 corridor, such as the California Coast Classic (Amgen) Tour.

Although other stretches of Highway 1 present significant challenges such as limited line of sight visibility, limited shoulder area, and steeper grades, the ride between Morro Bay and San Luis Obispo is currently recommended for use only by experienced road cyclists, because of safety concerns and other factors. There have been at least two fatal bicycle accidents along the northern portion of the route (near Morro Bay Boulevard), in May and September 2013. Figure 2 provides a summary of bicycle and pedestrian accidents within the study area, as drawn from the Transportation Injury Mapping System, (TIMS) maintained by the Safe Transportation Research and Education Center (SafeTREC) at UC Berkeley. The TIMS database covers the time period from January 2003 to December 2012. In addition to the two bicycle fatalities listed above, there was a bicycle fatality on Highway 1 near San Bernardo Creek Road in January 25, 2004. Also of note is the cluster of non-fatal bicycle-automobile collisions near the intersection of Highland Drive and Santa Rosa Avenue.

Controlled Intersections. In addition to the general traffic hazards presented by bicycle riding adjacent to automobile and truck traffic traveling at rates above 60 miles per hour without a barrier or separation, crossing the highway at intersections poses particular safety concerns. Controlled intersections within the study area include signalized intersections at five locations, as well as roads with stop signs on the minor access roads leading to Highway 1. There are no four-way stop sign intersections along Highway 1 within the study area.

CHORRO VALLEY TRAIL STUDY

Trail Alignments
FIGURE 2 BIKE/PED COLLISIONS



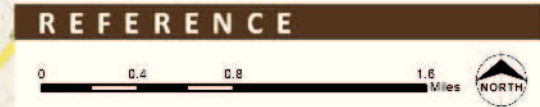
LEGEND

- Straight
- ↶ Left Turn
- ↷ Right Turn
- ↺ U-Turn
- ↻ Overturned
- ↘ Ran Off Road
- ⏸ Stopped
- ⊠ Parked
- 🚶 Pedestrian
- 🚲 Bicycle
- ⊠ Object
- Fatal Crash
- Injury Crash

- Collision Severity
- Fatal
 - Severe Injury
 - Other Visible Injury
 - Complaint of Pain

ROAD COLLISION OCCURRED ON	NEAREST CROSS STREET	# INJURED	SEVERITY OF INJURY	# of PED, CYCLISTS, VEHICLES INVOLVED	MONTH	YEAR	CASE ID
LAS TUNAS	QUINTANA RD	1		🚲 🚗	MAY	2004	1443005
RT 1	MORRO BAY BL	1		🚲 🚗	JUN	2007	3249274
RT 1	SOUTH BAY BL	1		🚲 🚗	JAN	2005	1863897
RT 1	SOUTH BAY BL	1		🚲 🚗	SEP	2007	3385221
RT 1	SAN BERNARDO CREEK R	1		🚲 🚗	JAN	2004	1404971
RT 1	CANET RD	2		🚲 🚲 🚗	MAY	2006	2663158
RT 1	GILARDI RD	2		🚶 🚲 🚗	APR	2012	5597970
RT 1	GILARDI RD	1		🚲 🚗	FEB	2007	3064084
RT 1	GILARDI RD	1		🚲 🚗	FEB	2006	2400564
RT 1	KANSAS AV	1		🚲 🚗	JUL	2006	2718929
RT 1	COLONY DR	1		🚲 🚗	MAY	2010	4731521
RT 1	COLONY DR	1		🚲 🚗	OCT	2007	3435088
RT 1	COLONY DR	2		🚲 🚲 🚗	APR	2011	5180130
RT 1	STENNER CREEK RD	1		🚶 🚲 🚗	OCT	2003	1098520
RT 1	STENNER CREEK RD	1		🚲 🚗	SEP	2004	1641388
RT 1	STENNER CREEK RD	1		🚲 🚗	SEP	2004	1641384
RT 1	STENNER CREEK RD	1		🚲 🚗	JUL	2012	5724403
RT 1	PASEO DE CABALLO	1		🚲 🚗	NOV	2010	4971230
HIGHLAND	CHORRO	1		🚶 🚲 🚗	NOV	2003	1153982
RT 1	HIGHLAND DR	1		🚲 🚗	FEB	2009	4096381
RT 1	HIGHLAND DR	1		🚲 🚗	AUG	2011	5260733
RT 1	HIGHLAND	1		🚲 🚗	OCT	2006	2820854
RT 1	BOYSEN	1		🚲 🚗	NOV	2006	2889774
RT 1	BOYSEN	1		🚲 🚗	MAY	2009	4237373
RT 2	BOYSEN	1		🚲 🚗	SEP	2011	5343418
RT 1	BOYSEN	1		🚶 🚲 🚗	FEB	2007	3060306
RT 1	FOOTHILL	1		🚲 🚗	MAR	2010	4656315

Collisions dates 1/1/2003 - 12/31/2012 from Morro Bay Blvd to Foothill Blvd
Source: Transportation Injury Mapping System, tims.berkeley.edu



Map Sources: Data provided by San Luis Obispo County, Public Works, and Transportation Department, 2014; U.S. Fish and Wildlife Service, January 2014. Critical habitat shown is that most recently available from U.S. FWS. Check with U.S. FWS or Federal Register to confirm. California Natural Diversity Database, February, 2014.


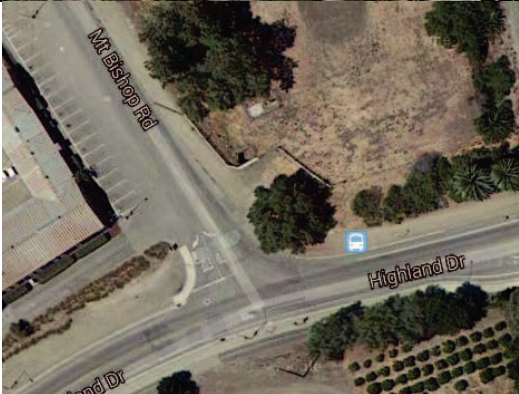



EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT





Signalized intersections lack pedestrian and bicycle accommodations such as bicycle/pedestrian buttons, sidewalks, curbs, ramps or refuge/safety islands, flashers, signage or other safety features. The intersections that have stop signs are not four-way stops and are unsafe for crossing Highway 1. Some vehicular driveways, such as the Camp SLO entry, have separated ingress and egress facilities with stop signs and slip lanes to accommodate vehicular access, but are challenging to bicyclists who must avoid drivers travelling at high speeds (Righello, 2014).

Table 1 describes the intersections within the project area, as well as issues associated with user safety for bicyclists and pedestrians.






Table 1
Intersections in the Study Area

Segment	Location	Description	
1A	Highland at California	Stop signs, striped crosswalk and partial sidewalks along north and east sides	
	Highland at Mount Bishop	Stop sign at northwest corner only, no crosswalk to Class 1 path; small discontinuous sidewalk	
	Mount Bishop Road at Unnamed Road	No sidewalks, crosswalks or stop signs	




EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Segment	Location	Description	
	Mount Bishop at Stenner Creek Road	Stop sign at NE corner, no sidewalks, crosswalks or striping	
1B	Santa Rosa (Hwy. 1) At Highland	Signalized intersection with discontinuous sidewalks, crosswalks on south and west side only	
	Highland at Stenner Creek Road	Left turn and right turn lanes into Stenner Creek Road, stop sign NW corner. No bike/ped facilities	
1B/1C	Hwy. 1 at Cal Poly farm road	Uncontrolled	

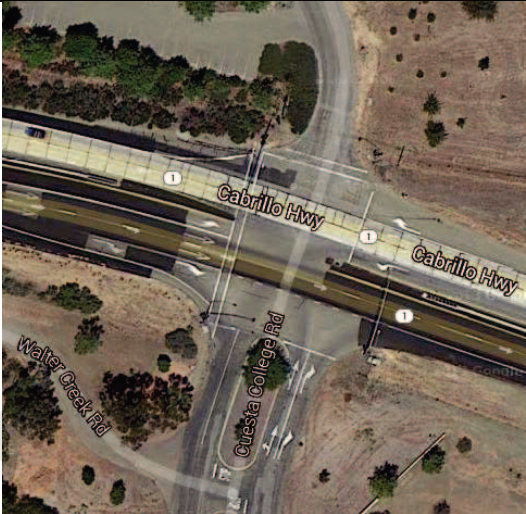



EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Segment	Location	Description	
2B	Hwy. 1 at Cal Poly access road	Uncontrolled	
3A	Colony Drive at Santa Cruz Road	Stop sign at SW corner only, no sidewalks or crosswalks	
3A	Kern Avenue (Camp SLO)	Kern Avenue crosses under Hwy. 1 within Camp SLO secure area; no stop signs	
3B	Hwy 1 at Colony Drive	Signalized intersection, left and right turn lanes; no sidewalks, crosswalks or bike/ped facilities	
	Hwy. 1 at Mainini Ranch Road	Uncontrolled, private	





EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Segment	Location	Description	
	Hwy. 1 at Kansas Avenue (county facilities)	Signalized intersection, left and right turn lanes; merge lanes; no sidewalks, crosswalks or bike/ped facilities	
	Hwy 1 at Sonoma Ave. (Camp SLO entry)	Dual entry with slip ingress/egress and turn lanes E/W; no bike/ped/crosswalks; security barriers	
4A, 4B	Hwy 1 at Hollister Avenue (entrance to Cuesta College, El Chorro Regional Park)	Signalized intersection, left and right turn lanes; merge lanes; no sidewalks; crosswalks on N/W/S sides; no bike/ped facilities	


EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Segment	Location	Description	
4A, 4B	Hwy. 1 at Education Drive, Watson Drive (main Cuesta College entrance)	Signalized intersection, left and right turn lanes; merge lanes; no sidewalks; crosswalks on N/W/S sides; no bike/ped facilities	
5A, 5B	Hwy. 1 at Gilardi Road	Stop signs at minor roads; no bike/ped facilities	
6A, 6B	Hwy 1 Equipment Under-crossing Hwy. 1 DFW	Within Chorro Creek Ecological Reserve; CA DFW	
6A	San Luisito Creek Road at Adobe Road	Stop signs on Adobe Road only; no bike/ped facilities	

EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Segment	Location	Description	
6A, 6B	Hwy. 1 at San Luisito Creek Road and Canet Road	Stop signs on minor roads; left turn lanes; no bike/ped facilities	
6A, 6B	Hwy 1 Equipment Under-crossing Hwy. 1 (Jones)	Equipment access to Jones property under Hwy. 1; Caltrans ROW extends to toe of slope on S/S	
7A, 7B	Hwy. 1 at San Bernardo Creek Road and Quintana Road	Stop signs on minor roads; Left turn pockets; no bike/ped facilities	
7A	Highway 1 at South Bay Blvd.	Hwy interchange, South Bay Blvd. crosses under Hwy; stop signs at on/offramps; no sidewalks, crosswalks or bike/ped facilities	

EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Segment	Location	Description	
7B	South Bay Blvd. at Quintana Road	Street layout accommodates high speed turns onto Quintana; bus stops on South Bay Blvd., but no crosswalks, sidewalks or bike/ped facilities. Quintana Road to the west is striped for Class II bike lanes.	


Existing Roads and Right of Way. Existing roads and paths within the study area represent opportunities for cost-effective use of existing pavement and longitudinal corridors for potential trail alignments. Roads within the area are owned by a variety of public, private and institutional entities, including:

Public:

- Caltrans
 - Highway 1, Santa Rosa Street
- San Luis Obispo County
 - Stenner Creek Road
 - Portions of Adobe Road
 - Kansas Avenue
 - Dairy Creek Road
 - Watson Drive
 - San Luisito Creek Road
 - Canet Road
 - San Bernardo Creek Road
 - Portions of Quintana Road
 - South Bay Drive
- City of Morro Bay
 - Portions of Quintana Road

Public/Institutional:

- Cal Poly
 - Mount Bishop Road
 - Various farm roads
 - Walter Creek Road
 - Benjamino Road
 - Portions of Gilardi Road
- California Department of Fish and Wildlife
 - Tomasini Road
 - Portions of Adobe Road
 - Portions of Gilardi Road



EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

- Camp SLO (CA National Guard)/ California Men's Colony
 - Colony Drive
 - Portions of Santa Cruz Road
 - Kern Avenue
- Cuesta College
 - Hollister Avenue
 - Education Drive
 - Various surface streets

Private:

- Portions of Santa Cruz Road
- Mainini Ranch Road
- Portions of Adobe Road

Table 2 describes the length, ownership and characteristics of existing roads and trail segments that would be utilized as part of potential trail alignments within the Study area.

Potential Impacts or Constraints

In general, throughout the study area, crossings at signalized intersections are unsafe for bicyclists and pedestrians, due to the lack of bicycle/ pedestrian buttons, sidewalks, curbs, ramps or wide crossings that lack refuge/safety islands, flashers, signage or other safety features, and would need to be upgraded and incorporated into any trail implementation. The constraints matrix shown below identifies severe constraints for several segments, including:

- Segment 1A: Moderate constraint. Trail would be located within existing road right of way, necessitating markings, barriers or construction of parallel path to separate users from vehicles. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users. Portions of existing road are not ADA compliant.
- Segment 1B: Severe constraint. Steep grades on portions of HWY 1 north of Highland Drive would necessitate extensive embankment structure to create trail. Not ADA compliant. Permanent traffic safety barrier, and potential access ramps would be required for Class 1 path. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users.
- Segment 1C: Moderate constraint. Intersection improvements needed. Trail would be located within existing road right of way, necessitating markings, barriers or construction of parallel path to separate users from vehicles.
- Segment 2A: Moderate constraint. Trail would be located within existing road right of way, necessitating markings, barriers or construction of parallel path to separate users from vehicles. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users. Portions of existing road are not ADA compliant.

**Table 2
Existing Roads and Study Segments**

Segment	Alignment	Segment Length (feet)	Road Name	Road Length	Ownership	Total ROW Width (feet)	Paved Width (feet)	Unpaved Width (feet)	Surface	Notes
1	A	6400	Highland Dr	200	City of San Luis Obispo	30	12		Paved	Concrete sidewalk on east direction side & Bike lane ends at Mt. Bishop
			Mt. Bishop	5480	Cal Poly	18-24	18-24	0-6	Paved	Sidewalk in eastern direction in some places and dirt shoulders (south section)
			West of Stenner Creek Rd	720	Cal Poly				No existing road	No established road in this section (Dirt Trail\Access)
	B	5000	HWY 1 (Cabrillo HWY)	-	State of California Caltrans	130-375	70-120	10-260	Paved	
	C	800	1B to 1A Connection	-	Cal Poly				No existing road	Between Agricultural Areas, Trees in alignment path
2	A	6500	1A to Colony Drive	-	Cal Poly				No existing road	Between Agricultural Areas, Trees in alignment path
	B	6000	HWY 1 (Cabrillo HWY)	5425	State of California Caltrans	140-400	70-120	20-300	Paved	
			Santa Cruz Road	575	State of California National Guard /CMC	14-20	14-16	0-6	Deteriorated paved	Some of this segment has no existing road
3	A	12000	Colony Drive	175	State of California National	26-40	26-40	0-4	Paved	

EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Segment	Alignment	Segment Length (feet)	Road Name	Road Length	Ownership	Total ROW Width (feet)	Paved Width (feet)	Unpaved Width (feet)	Surface	Notes
					Guard					
			Colony Dr to Kern Ave	7845	State of California National Guard	34-48	26-40	0-8	No existing road	Old railroad line (gravel, tracks and railroad ties)
			HWY 1 (Cabrillo HWY)	3980	State of California Caltrans	110-300	70-80	30-220	Paved	Right turn lanes cut usable shoulder area
	B	11700	Colony Drive	100	State of California National Guard/CMC	34-48	26-40	0-8	Paved	
			HWY 1 (Cabrillo HWY)	11600	State of California Caltrans	110-400	70-80	30-320	Paved	
4	A	4000	HWY 1 (Cabrillo HWY)	-	State of California	140-195	85	55-110	Paved	Curbs at edge of 8' shoulder, fencing and steep slope
	B	4000	HWY 1 (Cabrillo HWY)	-	State of California	140-195	85	55-110	Paved	Curbs at edge of 8' shoulder & Bioswale
5	A	12200	HWY 1 (Cabrillo HWY)	12200	State of California	140-330	80-120	20-210	Paved	Divided HWY Section, Slope, Curbs
	B	12500	Walter Creek Road	1260	Cal Poly	20	15	5	Gravel/Paved	
			Walter Creek Rd to Tomasini Rd	4790	Cal Poly/CDFW	12		12	Dirt	Access road parallels HWY 1
			Tomasini Road	6450	CDFW	45	20	25	Paved/Deteriorated	700' covered by sediment
6	A	8300	Underpass	2420	Caltrans,	18		18	Dirt	Access Road

EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Segment	Alignment	Segment Length (feet)	Road Name	Road Length	Ownership	Total ROW Width (feet)	Paved Width (feet)	Unpaved Width (feet)	Surface	Notes
			to Adobe Rd		easement to CDFW					
			Adobe Road	910	CDFW	22	18	4	Paved	
			San Luisito Creek Road	170	SLO County	35	25	10	Paved	
			HWY 1 (Cabrillo HWY)	4800	State of California Caltrans	170-320	90-95	75-225	Paved	Trees and slopes
	B	8000	Tomasini Road	1460	CDFW	45	20	25	Paved/Deteriorated	
			Tomasini Road to HWY 1	1740	CDFW				No existing road	
			HWY 1 (Cabrillo HWY)	4800	State of California Caltrans	170-275	90-95	75-180	Paved	
7	A	8500	San Luisito Creek Rd to Adobe Rd	2115	State of California Caltrans				No existing road	
			Adobe Road	565	SLO County	18	12	6	Paved	
			HWY 1 (Cabrillo HWY)	4870	State of California Caltrans	170-240	90-160	10-120	Paved	
			S Bay Blvd	950	SLO County	34	26	8	Paved	Steep Slopes on west side
	B	8000	HWY 1 (Cabrillo HWY)	2630	State of California Caltrans	170-240	90-160	10-120	Paved	Widths increase at intersections
			Quintana Road	5370	SLO County	40	22	18	Paved	CALTRANS ROW 60' +/-

- Segment 2B: Severe constraint. Steep grades on portions of HWY 1 east of Colony Drive would necessitate extensive embankment structure to create trail. Not ADA compliant. Permanent traffic safety barrier, and potential access ramps would be required for Class 1 path. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users.
- Segment 3A: Severe constraint. Steep grades on portions of HWY 1 west of Kern Ave. would necessitate extensive embankment structure to create trail. Not ADA compliant. Permanent traffic safety barrier, and potential access ramps would be required for Class 1 path. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users. Enclosed overpass at Kern Ave and security fencing would be required by Camp SLO for security purposes.
- Segment 3B: Severe constraint. Steep grades on portions of HWY 1 at Colony Drive would necessitate extensive embankment structure to create trail. Permanent traffic safety barrier, and potential access ramps would be required for Class 1 path. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users. Reconfiguration of entry at Camp SLO may be needed to reduce trail/vehicle conflicts. Installation of signalized intersection or relocation of Camp SLO entry to Hollister Avenue should be considered as a long-term option to improve safety.
- Segment 4A: Low constraint. Gentle slopes and available right of way within El Chorro Regional Park to locate trail segment. Retrofit of Dairy Creek box culvert would be needed to provide access to Cuesta College. Lighting of undercrossing may be needed to improve safety.
- Segment 4B: Low constraint. Gentle slopes and available right of way within Cuesta College to locate trail segment. Retrofit of Dairy Creek box culvert would be needed to provide access to Regional Park. Lighting of undercrossing may be needed to improve safety.
- Segment 5A: Severe constraint. Steep grades on portions of HWY 1 may necessitate extensive embankment structures, retaining walls and/or bridges to create trail. Not ADA compliant. Permanent traffic safety barrier, and potential access ramps may be needed in portions for Class 1 path. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities may be needed at Gilardi Road for pedestrian and bicycle users.
- Segment 5B: Low constraint. Gentle slopes and existing Old HWY 1/Tomasini Road right of way would be optimal to locate trail segment. Retrofit of box culvert within Chorro Creek Ecological Reserve would be needed to provide access to north side of HWY. Lighting of undercrossing may be needed to improve safety.
- Segment 6A: Severe constraint. Steep grades on portions of HWY 1 may require retaining walls or ramps to improve accessibility. Permanent traffic safety barrier, and potential access ramps would be required for Class 1 path. Trail would need to be located within Caltrans ROW for a portion of the segment due to property owner concerns. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users in the vicinity of Adobe Road and San Luisito Road. Allowed use of existing equipment undercrossing for public access needs to be verified.
- Segment 6B: Severe constraint. Steep grades on portions of HWY 1 may require retaining walls or ramps to improve accessibility. Permanent traffic safety barrier, and potential access ramps would be required for Class 1 path. Trail would need to be located within Caltrans ROW for a portion of the segment due to property owner concerns. Intersection

improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users in the Canet Road area. Use of Caltrans' channel change easement needs to be verified, or trail located within Caltrans ROW. Allowed use of existing equipment undercrossing for public access needs to be verified.

- Segment 7A: Severe constraint. Steep grades on portions of HWY 1 may necessitate embankment structure to create trail. Permanent traffic safety barrier, and potential access ramps may be required for Class 1 path. A signalized intersection would be needed at San Bernardo Creek/Quintana Road to allow safe crossing unless adjacent trail segment remains on the same side of HWY 1. Trail would need to be located within Caltrans ROW for a portion of the segment due to property owner concerns. Intersection improvements such as curb ramps, signals, buttons, crosswalks or other facilities needed for pedestrian and bicycle users. Use of South Bay Drive and on/off/ramp crossing conflicts are extensive.
- Segment 7B: Severe constraint. A signalized intersection would be needed at San Bernardo Creek/Quintana Road to allow safe crossing unless adjacent trail segment remains on the same side of HWY 1. Intersection improvements at South Bay Drive and Quintana Road are needed, such as curb ramps, signals, buttons, crosswalks, signal, traffic signal, roadway pavement modification, pedestrian refuge, bus stop improvements or other facilities needed for pedestrian and bicycle users.

Mitigation Measures

The following measures could be implemented to improve safety for cyclists and pedestrians on the Chorro Valley Trail:

- Design the trail, where possible, to comply with ADA accessibility requirements, to maximize universal trail accessibility.
- Provide a separate Class I path where possible.
- Where the trail must be located within HWY 1 right of way, locate the trail as far away as possible from the travel lanes to provide as much physical separation as possible. Use barriers and/or grade changes to separate trail users from vehicular traffic.
- Explore potential use of other roads within Cal Poly lands that may be better suited to accessibility requirements, such as farm roads along Stenner Creek.
- To protect cyclists riding on the shoulder of Highway 1, barriers could be strategically installed in key locations to physically separate the bike path from motorized vehicles, where there is sufficient right of way.
- Where the Chorro Valley Trail crosses signalized intersections, improvements should be made to improve traffic safety; these improvements may include bicycle/ pedestrian buttons, sidewalks, curbs, ramps or refuge/safety islands, flashers, signage or other safety features.
- If the preferred trail alignment crosses HWY 1, consider grade separation or traffic signal installation to accommodate non-vehicular trail users.
- Consider long-term options to improve or modify access to Camp SLO to reduce vehicular-bicycle-pedestrian conflicts.

Consistency with Policies

The proposed trail would be consistent with applicable policies to improve traffic safety for bicyclists and pedestrians. Policy 1G in the Scenic Byway Corridor Plan states that maintenance and rehabilitation of highways and shoulders should consider the safety needs of these users (SLOCOG, 2007). Where the trail is aligned on the shoulder of Highway 1, it would be designed to improve the safety of bicyclists. In addition, the trail would be consistent with the Regional Transportation Plan's primary goal of improving bicycle and pedestrian opportunities through the corridor by developing an off-highway trail where feasible, thereby protecting these users from motorized traffic. The Estero Area Plan also recognizes that "Class I bikeways should be developed, or Class II bikeways need to be located on streets with minimal traffic in order to encourage bicycle use by school-age children, commuters, shoppers, senior citizens, and others" (San Luis Obispo County, 2009). Finally, the trail must be consistent with Caltrans policy requiring a recovery zone for motorized vehicles, with a 30-foot distance from travel lane to guard rail.

Conclusion


The Chorro Valley Trail would generally improve safety conditions for cyclists by enabling them to ride off of Highway 1, thereby reducing the risk of collisions between cyclists and high-speed motorized vehicles. Even in trail alignments that occupy the Caltrans right-of-way on Highway 1, it may be possible to align the trail as a separated facility on an elevated bench above the highway, or below the highway at the foot of an embankment. However, in segments where the trail is routed on the shoulder of Highway 1, cyclists would remain exposed to traffic hazards without installation of a barrier or separation from motorized vehicles.

Although the provision of off-highway segments for cyclists would improve safety conditions in the study area, hazards would remain severe on the shoulder of Highway 1 without the installation of barriers to separate cyclists from motorized vehicles. As evidenced by the history of fatal and non-fatal collisions between cyclists and motorists on Highway 1 in and near the study area, off-highway alignments are preferable from the standpoint of traffic safety.

Agricultural Resources

Environmental Setting

The majority of the Chorro Valley and surrounding areas are designated for agricultural use and currently under agricultural production. In the Estero planning area, which encompasses the Chorro Valley, Los Osos Valley, Morro Bay, and the Cayucos area, approximately 74 percent of all land (31,415 acres) is designated for agricultural use (San Luis Obispo County, 2003). In the Chorro Creek watershed, rangeland comprises 63 percent of the area and croplands cover an additional six percent (MBNEP, 2005). The Estero area has a mild



EXISTING CONDITIONS, OPPORTUNITIES AND CONSTRAINTS REPORT

Mediterranean climate, with temperatures moderated by proximity to the Pacific Ocean, resulting in about 335 growing days per year (San Luis Obispo County, 2003).

As shown by Figure 3, the upland portions of the Chorro Valley consist primarily of grazing lands. Pockets of important farmland exist along Chorro Creek, approximately between its confluences with San Luisito Creek and San Bernardo Creek, and along Stenner Creek within Cal Poly. To the west of San Luisito Creek Road, Alignments A and B also approach the boundaries of lands under Williamson Act contract to preserve agricultural use.

The Chorro Valley Trail would pass through or adjacent to both publicly and privately held farmland. In the eastern portion of the study area, from Highland Road west to the California Men's Colony, Cal Poly San Luis Obispo (Cal Poly) operates a wide range of agricultural facilities to the northwest of the instructional core of its campus. To the west of the railroad tracks, Cal Poly maintains a variety of orchards, row crops, experimental crops, and pastures (Cal Poly, 2001). A dairy and agricultural wastewater treatment ponds are located along Mt. Bishop Road, while poultry operations are sited near the intersection of Mt. Bishop and Stenner Creek Roads. Between Stenner Creek Road and the California Men's Colony, Cal Poly manages rangeland, vineyards, sheep facilities, and agricultural ponds on the 442.8-acre Cheda Ranch.

Cal Poly also manages agricultural lands to the west of Cuesta College and the Dairy Creek Golf Course, as part of the Chorro Creek Watershed Management Area. Chorro Creek Ranch is located to the southwest of Highway 1, while Walters and Escuela ranches are located to the northeast. The acreages of all Cal Poly ranches crossed by potential alignments of the Chorro Valley Trail are listed in Table 3.

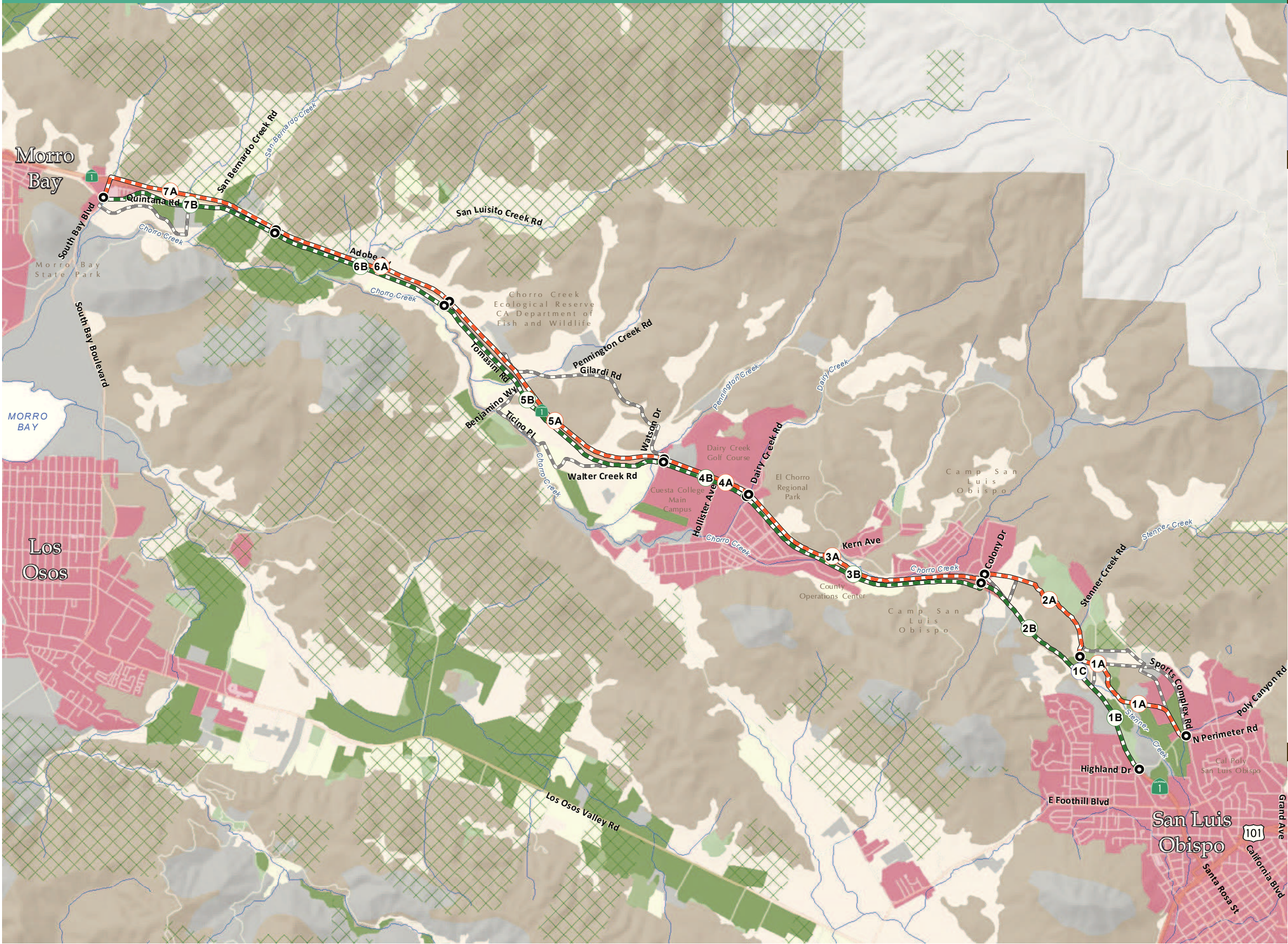
Table 3
Cal Poly Ranches in Study Area

Ranch	Acreage
Cheda	442.8
Chorro Creek	534.5
Walters	712.7
Total	1,690

Source: Cal Poly Master Plan, 2001.

CHORRO VALLEY TRAIL STUDY

Trail Alignments
FIGURE 3 AGRICULTURAL RESOURCES



LEGEND

- Potential Trail Alignment Alternatives**
- Alignment A
 - Alignment B
 - Alignment C (Single Segment)
 - Additional Alignment Considered
 - Segment Start/Stop
- Famland Inventory**
- Prime Farmland
 - Farmland of Statewide Importance
 - Unique Farmland
 - Farmland of Local Importance
 - Grazing Land
 - Urban and Built-Up Land
 - Other Land
 - Farmland of Local Potential
 - Not Surveyed
 - Williamson Act Land

THIS MAP IS NOT A TRAIL GUIDE
This map is a preliminary planning tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the routes or staging areas identified on this Map are simply proposed for further study and are not open to the public for any purpose. This map does not convey any right to the public to use any trail routes shown, nor does it exempt any person from trespassing charges.

REFERENCE



Map Sources: Data provided by San Luis Obispo County, Public Works, and Transportation Department, 2014; California Department of Conservation Farmland Mapping and Monitoring Program, 2010; Caltrans, 2013; Eugene Jud and Cal Poly, 2009; ESRI, 2014.



The Chorro Creek and Walters ranches are used for various agricultural studies such as vineyards, grazing and dry farming. On part of Chorro Creek Ranch, Cal Poly leases land to E.&J. Gallo Winery for vineyard production.

To the west of Chorro Creek Ecological Preserve, the study area includes multiple private agricultural properties. The predominant private agricultural holding in this area is the Morro Bay Ranch, in the vicinity of mile marker 26.5 on Highway 1.

The majority of the study area is also zoned for agricultural use. The northeast side of Highway 1 between Highland Drive and the California Men's Colony is zoned Agricultural, as is the south side of Highway 1 generally between Paseo De Caballo and Mainini Ranch Road (San Luis Obispo County, 2014). All land in the study area to the west of the County Office of Education and Cuesta College, with the exception of a small residential area near the Adobe Road/San Luisito Creek Road intersection, is zoned Agricultural.

Potential Impacts or Constraints

Operation of the Chorro Valley Trail could result in land use conflicts between trail users and neighboring agricultural operations. Typical conflicts include potential exposure of trail users to pesticides sprayed nearby, trespassing on farmland, and crop contamination. In particular, Cal Poly officials have expressed concern that if a trail segment is constructed on Cal Poly farm roads to the west of Stenner Creek Road and enclosed by fencing, this could obstruct the movement of cattle (Neel, 2014). Trail use in agricultural areas also could interfere with the movement of agricultural vehicles. For example, the Chorro Valley Trail could be routed through an existing undercrossing of Highway 1 at the junction between Segments 6 and 7, which is currently used for vehicular access to private farmland separated by the roadway.

Construction of the Chorro Valley Trail also could result in minimal conversion of important farmland. If the trail is constructed on Alignment B in Segments 6 and 7, it could be located on the northern edge of privately owned prime farmland. In this area, it should be noted, the trail could be built on unpaved farm roads that under agricultural cultivation. Furthermore, on this alignment, the trail might instead be located within Caltrans right-of-way at the foot of an embankment adjoining Highway 1. Nevertheless, the construction of Alignment B in Segments 6 and 7 has the potential to involve the conversion of a small amount of important farmland.

The trail also could pass through agricultural land on Cal Poly within Segments 1 and 2. However, Alignment 1A is located on the paved Mt. Bishop Road, adjacent to existing agricultural operations. Although Alignment 2A crosses agricultural land owned by Cal Poly, it would run along existing farm roads adjacent to unique farmland and traverse grazing land to the east of the California Men's Colony.

In addition, as indicated by Figure 3, if Alignment B is constructed within private farmland in Segments 6 and 7, it could conflict with existing Williamson Act contracts. According to the County's *Rules of Procedure to Implement the California Land Conservation Act of 1965* (also referred to as the Williamson Act), neither passive recreation nor outdoor sports/recreation are compatible uses on agricultural lands under Williamson Act contract. However, the proposed Chorro Valley Trail would

be intended primarily for commuting, and the *Rules of Procedure* do not address the question of compatibility of active transportation facilities. Any Williamson Act contract also would be rendered void if a government agency acquired such land for construction of the trail and identified this facility as necessary for the public.

Mitigation Measures

The following measures would minimize impacts on agricultural resources:

- **Agricultural Accessibility.** Fencing can be located in a manner which minimizes impacts related to accessibility to farmland and use of farming equipment (e.g., allowing turning radius area for farm equipment) to the greatest extent feasible. In addition, when the agricultural operator farms land on both sides of the trail, gates with locking mechanisms can be installed at appropriate locations along the fence to provide access to the farmland;
- **Fencing Design.** The height and type of fencing can be adjusted in agricultural areas when mutually agreeable to the implementing agency and the landowner and when deemed necessary to deter potential vandalism from trail users;
- **Notice of Agricultural Activities.** Notice of ongoing agricultural activities can be posted at trailheads, staging areas and rest areas. Consistent with San Luis Obispo County's right-to-farm ordinance, these notices would indicate the existence of neighboring agricultural operations, and the potential odors and pesticide hazards that are inherent in such operations. Notices also can address trespassing, use of restroom facilities in consideration of food hygiene issues on adjacent agricultural lands, and clean-up of waste from domestic animals;
- **Fugitive Dust Emissions.** During construction of the trail, excess fugitive dust emissions can be controlled by regular watering, paving, construction roads, or other preventive measures; and
- **Agricultural Conservation Easement.** To offset the any loss of important farmland, agricultural conservation easements can be purchased, or in-lieu fees paid for the future acquisition of such easements by a qualified entity, on farmland that is threatened by development.

Consistency with Policies

The Estero Area Plan contains policies to protect agricultural operations. Policy 2 for the Agricultural land use is to prevent conversion to other land use categories or allowance of more intensive non-agricultural development. The Chorro Valley Trail would be potentially consistent with this policy because it would not require re-designation of agricultural land uses. Policy 8 is to protect the Chorro Valley for continued agricultural use, retaining the larger parcels for cropland and grazing uses while allowing plant and animal specialties on smaller parcels. The trail may complicate adherence to this policy without the implementation of mitigation measures because of potential conflicts with Williamson Act contracts and interference with agricultural operations at Cal Poly.

With appropriate mitigation as identified above, the proposed trail would be consistent with the San Luis Obispo County Right to Farm Ordinance (Chapter 5.16 of the County Code), including notification of neighboring agricultural operations and potential odors and pesticide hazards.

The Chorro Valley Trail also would be consistent with the policy in the Cal Poly Master Plan “to protect all remaining class I prime soils for future agricultural use,” as no proposed alignment through university land would affect prime farmland.

Conclusion

Potential impacts are most severe on Alignments 6B and 7B because of interference with agricultural operations and existing Williamson Act contracts, and on Alignment 2A because of agricultural operations at Cal Poly. For the remainder of the study area, agricultural impacts would be minimal to moderate.

Utilities/Service Systems

Environmental Setting

The Chorro Valley Pipeline, a local distribution line in the State Water Project, provides water to the study area. This pipeline serves Cuesta College, the Men’s Colony, Camp SLO, the County Operational Center, and El Chorro Regional Park (San Luis Obispo County, 1992). From east to west, the pipeline is located to the north of the Men’s Colony, crosses Camp SLO, travels roughly under Gilardi Road, and then parallels Highway 1 adjacent to the north. The Men’s Colony provides water to Camp SLO, in exchange for leasing land from the military base.

A wastewater treatment plant located at the southwestern corner of Camp SLO provides sewage treatment for most of the facilities within the eastern drainage basin of Chorro Creek, including the Men’s Colony, Camp SLO, the County Operational Center, and Cuesta College (California Army National Guard, 2001; San Luis Obispo County, 2003). Sludge is dewatered in evaporation beds, then stockpiled to the south of the plant.

A contracted private hauler serves the entire Estero planning area and delivers solid waste to Cold Canyon Landfill located in San Luis Obispo (Estero Area Plan EIR, 2003). The Chicago Grade Landfill, east of Templeton, is also available for solid waste disposal.

The trail would not generate demand for water supply or wastewater facilities, although amenities such as restrooms or drinking fountains could be considered as part of future trailhead improvements. These would likely be located at the ends of the project, in the vicinity of Highland Drive and South Bay Boulevard. Cuesta College and El Chorro Regional Park provide existing facilities at the midpoint of the study area. Table 4 identifies utilities and service system issues that may need modification as part of trail implementation.

Table 4
Utilities and Service Systems

Segment	Existing Infrastructure				
	Overhead Utility Conflict	Culvert	Equipment or Creek Under-crossing HWY 1	Bridge	Other Feature
1A	Depending on trail design and location, there may be conflicts with existing overhead utilities/poles along this road	Mount Bishop Road			
1B				Stenner Creek	
1C					
2A		Stenner Creek			CMC Security Fencing
2B					
3A	Depending on trail design and location, there may be conflicts with existing overhead utilities/poles along this road (Colony Drive); pipe/bridge crossing at creek; softball field at El Chorro Regional Park	Chorro Creek		Hwy. 1 at Chorro Creek	CMC/Camp SLO Security Fencing
3B	Potential utility conflicts near Camp SLO entrance			Hwy. 1 at Chorro Creek	CMC/Camp SLO Security Fencing
4A			Dairy Creek Box Culvert		CMC/Camp SLO Security Fencing
4B			Dairy Creek Box Culvert		CMC/Camp SLO Security Fencing
5A		Pennington Creek			
5B		Pennington Creek			
6A	Depending on trail design and location, there may be conflicts with existing overhead utilities/poles along Adobe Road	San Luisito Creek	Equipment Underpass Box Culvert-CCER		
6B		San Luisito Creek	Equipment Underpass Box Culvert-CCER		Canet Road Caltrans Channel Change Easement; boardwalk may be needed to stay within public ROW

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Segment	Existing Infrastructure				
	Overhead Utility Conflict	Culvert	Equipment or Creek Under-crossing HWY 1	Bridge	Other Feature
7A	Depending on trail design and location, there may be conflicts with existing overhead utilities/poles along N/S Hwy. 1		Hwy 1 at South Bay Blvd.	Hwy. 1 over San Bernardo Creek	
7A			Equipment Underpass Box Culvert-Jones		
7B	Depending on trail design and location, there may be conflicts with existing overhead utilities/poles along Quintana Road		Equipment Underpass Box Culvert-Jones	Hwy. 1 over San Bernardo Creek	

Potential Impacts or Constraints


Potential impacts or constraints associated with utilities within the Chorro Valley trail corridor would occur where there are utility crossings, overhead utilities and poles that would require relocation, underground utilities that might be disturbed as part of project implementation, or culverts or structures that would need to be relocated to accommodate a trail. In general, precise design and construction techniques would be utilized during the design and construction of the trail to avoid conflicts, and to shift the trail location as needed to minimize utility disturbance. In some instances, it may be possible to relocate utility poles to accommodate a trail, or place the trail over an underground utility with the expectation that there may be a need to close the trail temporarily to access the utility.

Areas where precise design would be needed to avoid utility pole relocation include Segments 1A, 3A, 3B, 6A, 7A and 7B. Design to avoid conflicts would also be needed at the equipment/creek undercrossings in Segments 3, 5 and 6. Precise design to include setbacks and buffers may also be needed to avoid conflicts to the power substation near Segment 2A, and to avoid utility conflicts within Cal Poly operations.

Mitigation Measures

The following measures could be implemented to reduce utility conflicts on the Chorro Valley Trail:

- Obtain complete survey information regarding utilities and easement locations as part of precise design of trail segments.



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- Adjust trail segments where possible to avoid relocation of existing utility lines or conflicts with major underground utilities.
- Provide a buffer for trail facilities located near the power substation.

Consistency with Policies

The proposed trail would be consistent with applicable policies to minimize impacts to utilities and service systems, and would not generate additional demand for water or wastewater facilities.

Conclusion

Project improvements can be carefully designed to avoid impacts to utilities and service systems. All construction will be in accordance with applicable codes, and survey information generated as part of precise design development will identify any specific areas where utility relocation or special design measures (culverts, retaining walls, fencing, etc.) may be needed to avoid utility conflicts.

Biological Resources

For the purpose of this report, the study area for biological resources was defined with an approximately 250-foot buffer around each trail alignment. This section is based on biological data collected from numerous sources, including relevant literature, maps of natural resources, interviews with land managers, and data on special-status species and sensitive habitat information obtained from:

- Aerial photographs of the study area and immediate vicinity;
- Morro Bay South and San Luis Obispo, California USGS 7.5-minute topographic quadrangle;
- San Luis Obispo County Vegetation mapping;
- US Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey of San Luis Obispo County California, Coastal Part (USDA-NRCS, 2014);
- United States Fish and Wildlife (USFWS) Critical Habitat Portal (USFWS, 2014a);
- California Natural Diversity Database (CNDDDB) records of state and federally listed species that have been previously documented within a 3-mile radius of the study area (CDFW, 2003);
- USFWS National Wetlands Inventory (NWI) Online Mapping Application query for the study area (USFWS, 2014b);
- California Department of Fish and Wildlife (CDFW) Biogeographic Information and Observation System Viewer Application for the BSA (CDFW, 2014); and
- Stafford, Bob. CDFW, San Luis Obispo County Land Manager. 2014.

Brief reconnaissance level surveys were also conducted to confirm the vegetation communities within the study area.

Environmental Setting

Figure 4 provides an overview of biological resources within or near the study area, including coast live oak woodlands, wetlands, critical habitat, and occurrences of special-status species. These resources are discussed in greater detail below.

Vegetation Communities. Six vegetation communities, in addition to urban land and open water, were identified within the study area. These communities include non-native grassland (herbaceous vegetation), agriculture, mixed riparian woodland (riparian vegetation), coyote brush scrub (shrub vegetation), coast live oak woodland (forest & woodland), and wetland (meadow & freshwater marsh). The acreage of each community is shown below in Table 5.

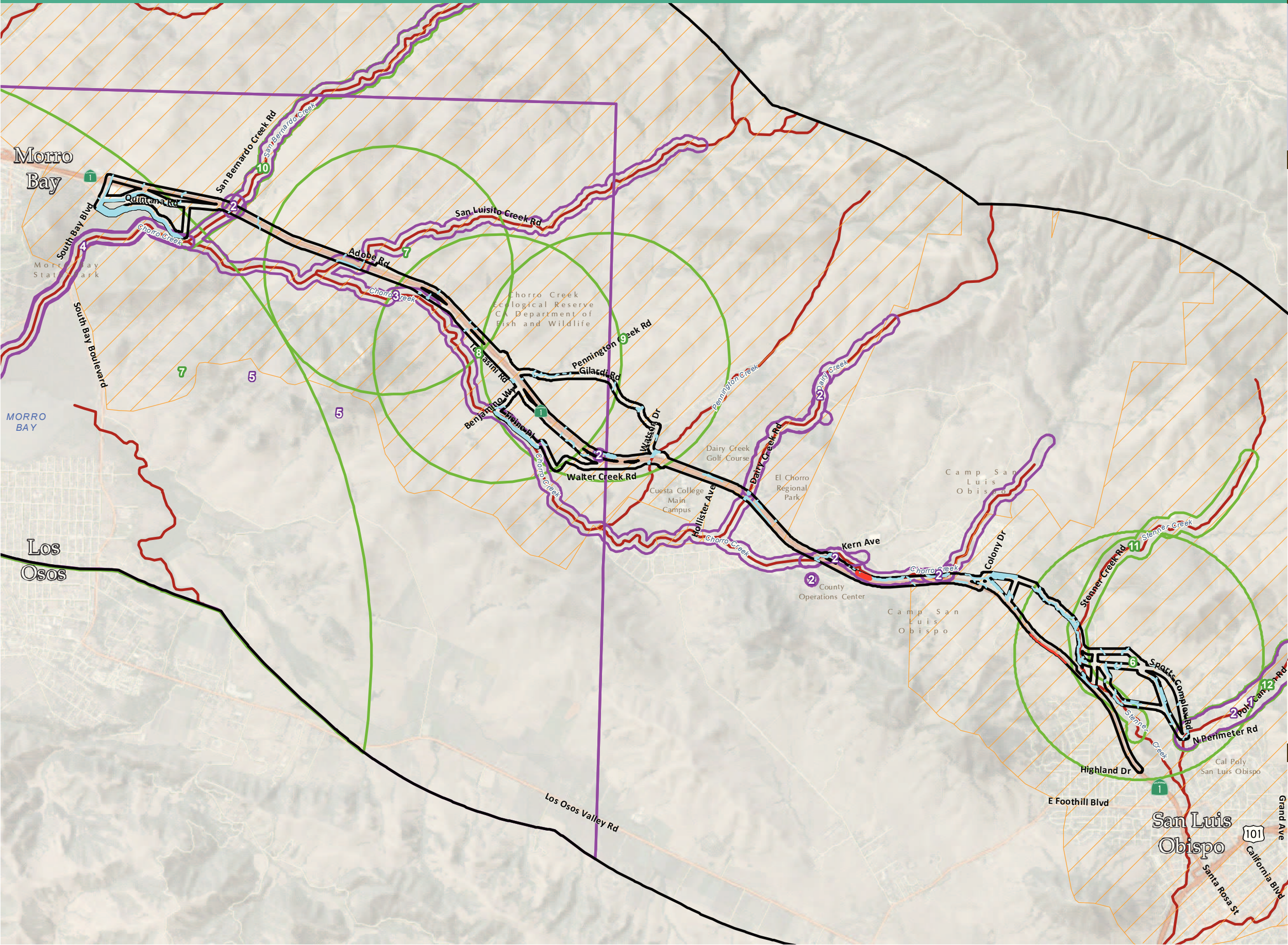
Table 5
Vegetation Communities

Vegetation Community	Acres
Non-Native Grassland (Mesomorphic Herbaceous Vegetation)	303.44
Developed (Urban Built Up)	214.55
Agriculture	179.38
Mixed Riparian (Temperate Flooded (Riparian Vegetation))	33.47
Coyote Brush Scrub (Mesomorphic Shrub Vegetation)	28.79
Coast Live Oak Woodland (Mesomorphic Tree Vegetation (Forest & Woodland))	11.70
Wetland (Temperate Meadow & Freshwater Marsh)	0.60
Open Water	0.56
Total	772.49

Special-Status Plants. This section discusses the potential for regional plant species of concern to occur within the study area. ‘Potential to occur’ is based on the presence or absence of suitable habitat for each species reported in the scientific database queries and background literature research that were conducted for the project. All occurrences of regional species and habitats of concern that have been reported by the resource agencies within a three-mile radius of the study area were considered. Based on the biological data queried and interviews conducted for this report, 20 special-status plant species have the potential to occur within the study area. The names, status, general ecological requirements, and type of habitat deemed suitable within the study for each special-status plant species with potential to occur on-site is summarized in Appendix A. The sensitive community Coastal and Valley Freshwater Marsh also has the potential to occur within the study area. Further studies are required to determine if these species occur within the study area.

CHORRO VALLEY TRAIL STUDY

Trail Alignments FIGURE 4 BIOLOGICAL RESOURCES



LEGEND

- Coast Live Oak Woodland Inventory
250-ft buffer
- National Wetland Inventory
250-ft buffer
- Biological Resource Buffer
(3-Mile / 250-ft)
- Critical Habitat**
 - California red-legged frog critical habitat
 - Steelhead
- California Natural Diversity Database Records that Intersect 250-ft Buffer**
 - Animals
 - Plants

- 1 - Coast Range newt
- 2 - California red-legged frog
- 3 - steelhead - south/central California coast DPS
- 4 - tidewater goby
- 5 - black legless lizard
- 6 - Congdon's tarplant
- 7 - Jones' layia
- 8 - Blochman's dudleya
- 9 - Arroyo de la Cruz manzanita
- 10 - Miles' milk-vetch
- 11 - Brewer's spineflower
- 12 - Eastwood's larkspur

THIS MAP IS NOT A TRAIL GUIDE
This map is a preliminary planning tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the routes or staging areas identified on this Map are simply proposed for further study and are not open to the public for any purpose. This map does not convey any right to the public to use any trail routes shown, nor does it exempt any person from trespassing charges.

REFERENCE



Map Sources: Data provided by San Luis Obispo County, Public Works, and Transportation Department, 2014, U.S. Fish and Wildlife Service, January 2014. Critical habitat shown is that most recently available from U.S. FWS. Check with U.S. FWS or Federal Register to confirm. California Natural Diversity Database, February, 2014.



Special-Status Wildlife & Critical Habitat. This section discusses the potential for regional wildlife special-status species to occur within the study area. 'Potential to occur' is based on the presence or absence of suitable habitat for each species reported in the scientific database queries and background literature research that were conducted for the project. All occurrences of regional species and habitats of concern that have been reported by the resource agencies within a three-mile radius of the study area were considered. Based on the biological data queried for this report, 23 special-status animal species have the potential to occur within the study area. The names, status, general ecological requirements, and type of habitat deemed suitable within the study for each special-status animal species with potential to occur on-site is summarized in Appendix B. In addition, critical habitat for California red-legged frogs and south-central California coast (SCCC) steelhead is present within the study area. Further studies are required to determine if these species occur within the study area.

According to the *Existing Conditions Report* for the Chorro Creek Ecological Reserve, published in 2005, steelhead have been identified during snorkel surveys in the portion of Chorro Creek that runs through the Ecological Reserve (MBNEP, 2005). Steelhead spawn in gravel deposits within a stream, typically located in pool tail-outs or riffles. Gravel deposits suitable for spawning are usually relatively free of fine sediment and have a sufficient intragravel water flow to deliver dissolved oxygen to developing embryos and flush metabolic wastes downstream. Required water releases from Chorro Reservoir and the discharge of treated effluent from the Men's Colony augment oversummering habitat for steelhead in Chorro Creek.

A roosting site for Townsend's big-eared bat has been observed at the historic Hollister Peak Ranch house in the Chorro Creek Ecological Reserve, adjacent to Alignment 6B (Stafford, 2014). At present, Townsend's big-eared bat is under evaluation for listing as a special-status species.

Drainages. The proposed project intersects numerous watersheds within the Chorro Valley, including numerous drainages and swales, all of which ultimately drain into the Pacific Ocean. The drainages within these watersheds are of biological importance considering they are utilized by species such as steelhead and California red-legged frogs. The following is a summary of the major watersheds that occur within the study area.

Brizzolari Creek. Brizzolari Creek flows through agricultural land surrounding the California Polytechnic State University before it joins Stenner Creek and eventually flows into the Pacific Ocean. Brizzolari Creek is a blue line stream and contains critical habitat for steelhead and California red-legged frogs. Relevant CNDDDB occurrences found within this creek include California red-legged frogs.

Stenner Creek. Stenner Creek flows into San Luis Obispo Creek in downtown San Luis Obispo and eventually into the Pacific Ocean. This tributary begins in the Santa Lucia Range and flows through the California Polytechnic State University. This creek flows through agricultural land surrounding the University and continue through urbanized areas of San Luis Obispo and eventually to the Pacific Ocean. Stenner Creek is a blue line stream and contains critical habitat for steelhead and California red-legged frogs. Relevant CNDDDB occurrences found within this creek include western pond turtle.

Chorro Creek. Chorro Creek is a tributary to Morro Bay, which is a tributary to the Pacific Ocean. Chorro Creek is a blue line stream and drains a watershed of approximately 43.2 square miles. Elevations range from sea level at the mouth of the creek to 1400 feet in the headwater areas. Valley grassland, coastal scrub and oak savanna dominate the watershed, with mixed conifer forest and oak woodlands dominating the upper elevations of the watershed. Chorro Creek contains critical habitat for steelhead and California red-legged frogs. Relevant CNDDDB occurrences found within this creek include steelhead and California red-legged frogs.

Dairy Creek. Dairy Creek is one of the main tributaries to Chorro Creek. Dairy Creek is a blue line stream and drains a watershed of approximately 2.64 square miles. Valley grassland, coastal scrub, and oak savanna dominate the watershed, with mixed conifer forest and oak woodlands dominating the upper elevations of the watershed. Dairy Creek contains critical habitat for steelhead and California red-legged frogs. Relevant CNDDDB occurrences found within this creek include steelhead, California red-legged frogs, and western pond turtle.

Pennington Creek. Pennington Creek is a tributary to Chorro Creek, tributary to Morro Bay Estuary and tributary to the Pacific Ocean. Pennington Creek is a blue line stream and drains a watershed of approximately 3.2 square miles. Valley grassland, coastal scrub and oak savanna dominate the watershed, with mixed conifer forest and oak woodlands dominating the upper elevations. Pennington Creek contains critical habitat for steelhead and California red-legged frogs.

San Luisito Creek. San Luisito Creek is a tributary to Chorro Creek, tributary to Morro Bay Estuary and tributary to the Pacific Ocean. San Luisito Creek is a blue line stream and drains a watershed of approximately 8.0 square miles. San Luisito Creek contains critical habitat for steelhead and California red-legged frogs. Relevant CNDDDB occurrences found within this creek include steelhead.

San Bernardo Creek. San Bernardo Creek is a tributary to Chorro Creek, tributary to Morro Bay Estuary and tributary to the Pacific Ocean. San Bernardo Creek is a blue line and contains critical habitat for steelhead and California red-legged frogs. Relevant CNDDDB occurrences found within this creek include steelhead and California red-legged frogs.

Nesting Birds. The Migratory Bird treaty Act (MBTA) with Canada, Mexico, and Japan makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of any and all nests that are occupied by migratory birds during the nesting season. California Fish and Game Code Section (CFGF) 3500 also prohibits the destruction of any nest, egg, or nestling. The mixed riparian, coyote brush scrub, coast live oak woodland habitat within the study area provide suitable habitat for nesting birds protected by the CFGF and MBTA.

Wetlands, Riparian Areas and Jurisdictional Areas. The NWI query found four types of wetlands present within the study area: riverine, freshwater emergent, freshwater pond, and freshwater forested/shrub. These areas potentially fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), CDFW, and/or the California Coastal Commission (CCC).



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Freshwater Emergent. Freshwater emergent wetlands are a palustrine system which includes all non-tidal waters dominated by trees, shrubs, emergent plant species, mosses or lichens. Wetlands of this type are also low in salinity and any ocean derived salts are less than 0.5 ppt. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet, and have salinities less than 0.5 ppt. The vegetation that occurs in freshwater emergent wetlands includes generally erect, rooted, perennial herbaceous hydrophytes.

Freshwater Forested/Shrub. These wetlands are a palustrine system which includes all non-tidal waters which are dominated by trees, shrubs, emergent, mosses or lichens. Wetlands of this type are also low in salinity and any ocean derived salts are less than 0.5 ppt. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet and have salinities less than 0.5 ppt. The vegetation found in freshwater forested/shrub wetlands are generally dominated by woody vegetation such as shrubs and trees that are less than 20 feet tall.

Freshwater Ponds. Freshwater ponds are a palustrine system which includes all non-tidal waters which are dominated by trees, shrubs, emergent, mosses or lichens. Wetlands of this type are also low in salinity and any ocean derived salts are less than 0.5 ppt. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, have a low water depth less than 6.6 feet and have salinities less than 0.5 ppt. These wetlands and deep water habitats are dominated by plants that grow on or below the surface of the water.

Riverine. Riverine habitats are a riverine system which includes all wetlands and deep water habitats contained in natural or artificial channels that contain periodically or continuously flowing water. This system may also form a connecting link between two bodies of standing water. Substrates generally consist of rock, cobble, gravel or sand.

Invasive Weeds. The most dominant vegetation community within the study area is non-native grassland, which comprises approximately 40 percent of the study area. The roadside areas of Highway 1 are frequently disturbed providing an opportunity for invasive weeds to establish. Furthermore, around the riparian habitat associated with Chorro and Walters Creeks, invasive plant species (primarily poison hemlock and black mustard) form a virtually continuous band (MBNEP, 2005).

Potential Impacts or Constraints

Construction of the trail also has the potential to adversely affect special-status plant and wildlife species, critical habitat for California red-legged frogs and steelhead, wetlands, nesting birds, and jurisdictional areas. However, the proposed trail also has the potential to benefit biological resources through the design of habitat restoration at drainage crossings, consistent with the Morro Bay National Estuary Program's goals for improvement of the Chorro Creek watershed. Furthermore, the trail would provide an opportunity for interpretative signage to improve public awareness of biological resources. Finally, although the trail could serve as a vector for the spread of invasive species, landscaping with native species would minimize this risk.

Mitigation Measures

To minimize potential impacts to biological resources in the trail corridor, the following is a preliminary list of mitigation measures may be adopted:

- Restore and enhance natural habitat at drainage crossings;
- Landscape with native species in the trail corridor;
- Conduct seasonally-timed surveys of special-status plants;
- Avoid minimize, or mitigate for special-status plants;
- Conduct focused surveys for sensitive wildlife;
- Train construction employees in environmental awareness;
- Observe best management practices (BMPs) during construction; and
- Erect fencing to protect the roost site for Townsend's big-eared bats along Segment 6B from trail users.

Consistency with Policies

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes:

- California Environmental Quality Act (CEQA)
- Federal Endangered Species Act (FESA)
- California Endangered Species Act (CESA)
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act

The Estero Area Plan does include policies applicable to the protection of biological resources within the study area.

U.S. Army Corps of Engineers. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that could discharge fill of material or otherwise adversely modify wetlands or other "waters of the United States." Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters. The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland value or acres. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any fill or adverse modification of wetlands that are hydrologically connected to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetland acres or values is met through compensatory mitigation involving creation or enhancement of similar habitats.

Regional Water Quality Control Board. The State Water Resources Control Board (SWRCB) and the local Central Coast Regional Water Quality Control Board (RWQCB) have jurisdiction over “waters of the State,” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The Central Coast RWQCB enforces actions under this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the Clean Water Act for waters subject to federal jurisdiction.

United States Fish and Wildlife Service. The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 et seq.). The USFWS generally implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in “take” of any federally listed threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

California Department of Fish and Wildlife. The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened, endangered or fully protected species. Take under CESA is restricted to direct mortality of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW also prohibits take for species designated as Fully Protected under the Code.

California Fish and Game Code sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands. The CDFW also has authority to

administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of plant.

Perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the stream zone (which could extend to the 100-year flood plain) consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream or lake.

Conclusion

Numerous sensitive biological resources are present within the vicinity of the proposed project. Based on the biological data queried for this report, there is the potential for twenty special-status plant species, twenty-three special-status wildlife species, and one natural community to be present within the study area. The proposed project may also impact nesting birds, wetlands, jurisdictional area, and critical habitat and may result in the spread of invasive weeds. Figure 4 shows the particular locations at which the Chorro Valley Trail could affect habitat for steelhead and California red-legged frogs, as well as wetland habitat and occurrences of special-status species. Potential constraints would be severe where alignments would require new drainage crossings (including Segments 2A, 3A, 3B, 6B, 7A, and 7B) and where they intersect with occurrences of special-status species (such as Segments 7A and 7B). Mitigation measures such as those recommended above will likely be required; however, once the final trail alignment and design is determined, further studies are needed to determine the extent of project impacts and if mitigation shall be required.

Hydrology (Drainage, Erosion, and Sedimentation)

Environmental Setting

Watersheds. The majority of the study area is in the Chorro Creek watershed, which drains a 43.2 square-mile area including the City of Morro Bay and its surrounding hills, mountains, and valleys. The watershed drains in a west-northwest direction via Chorro Creek where it flows into the Morro Bay Estuary which discharges to the Pacific Ocean. The watershed experiences a Mediterranean climate, with warm, dry summers and cool, wet winters. Total annual precipitation in the watershed ranges from about 18 to 25 inches annually, with most of it occurring between late November and early April. The elevation of the watershed ranges from sea level to 1,400 feet in the headwaters. The longitudinal profile of Chorro Creek is steepest in its headwaters and flattens toward Morro Bay (MBNEP, 2005). Slopes for the upper reaches of Chorro Creek exceed 3 percent, and diminish to about 0.3 percent near the bay outlet. Through the Chorro Creek Ecological Reserve, the average gradient is 0.46 percent, compared with 0.34 percent in the Chorro Flats site.

Major tributaries to Chorro Creek include Chumash Creek, Dairy Creek, Pennington Creek, San Bernardo Creek, San Luisito Creek, and Walters Creek. Although Chorro Creek is perennial and is fed

by areas of shallow groundwater within the Valley, nearly all of these tributaries are seasonal in their middle and upper reaches. Many, including Pennington Creek, support steelhead. Depending on the trail alignment, there are up to 15 possible waterway crossings in the Chorro Creek watershed. In addition to these, there are a number of small, unnamed creek tributaries and drainage ditches that cross through the project area, carrying local stormwater runoff from adjacent agricultural, open space, and developed areas.

A small section in the eastern portion of the study area (the Cal Poly campus) is drained by Stenner Creek, which is in the San Luis Obispo Creek watershed, an 83.6 square-mile area including the City of San Luis Obispo and its surrounding hills, mountains, and valleys. This watershed drains in a south-southwest direction via San Luis Obispo Creek where it flows into the Pacific Ocean at Avila Beach. San Luis Obispo Creek begins in the Cuesta Grade area north of San Luis Obispo at an elevation of 2,200 feet above mean sea level (MSL), in the western slopes of the Santa Lucia Range. The creek flows south through the City of San Luis Obispo next to Highway 101, continuing to the southern extent of the Irish Hills where it turns west to the ocean. The perennial Stenner Creek also supports steelhead.

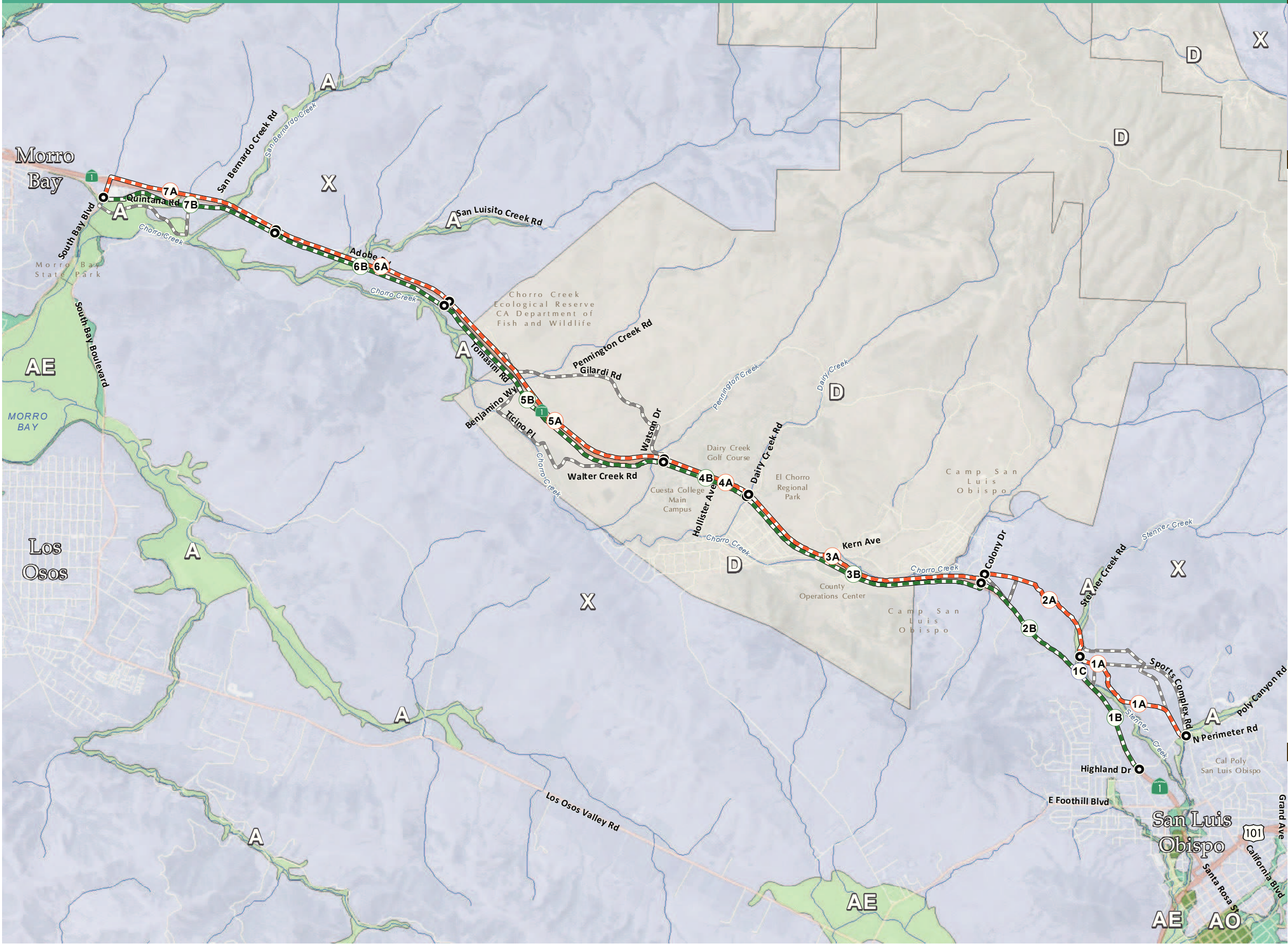
Flooding. During rainfall induced runoff events, areas adjacent to creeks in the study area are subject to flooding from over bank topping. In the lowest portion of the watershed, storm flows and resulting flood conditions can be exacerbated when seasonal high tides coincide with major rainfall events.

The Federal Emergency Management Agency (FEMA) has prepared a series of maps that show flood hazards along Chorro Creek and many of the small tributary creeks in the study area (see Figure 5). According to FEMA's Flood Insurance Rate Maps (FIRM), much of the study area is located within a designated Zone X, indicating that this area has shallow flooding of less than one foot for the 100-year base flood, or is within the 500-year flood zone. The east half of the study area from around Gilardi Road east is in Flood Zone D, which is an area where flood zones are undetermined, but flooding is possible. In the western half of the Trail Study area, relatively narrow 100-year flood zones (Zone A) are shown along Chorro Creek, San Luisito Creek, and San Bernardo Creek. Zone A is defined as being subject to inundation by the 1-percent-annual-chance flood event. The floodzone broadens out along Chorro Creek in the vicinity of Chorro Flats.

Erosion and Sedimentation. Morro Bay Estuary is consistently being dredged to compensate for sediment deposition from the Chorro Creek watershed, which is due to several factors. Erosion from brushland areas is the largest sediment source, contributing an estimated 30 percent of the total average annual yield of sediment (MBNEP, 2005). Brushland is primarily located in the upper reaches of the Chorro Creek watershed, and when considered on a per acre basis contributes approximately 4 tons/acre/year of sediment. Stream and gully erosion represent the second largest sediment source to Morro Bay, contributing approximately 22 percent of the total average annual sediment yield. Rangeland is the third largest source of sediment in the watershed, contributing an estimated 17 percent of total average annual yield. Considering that over half of the land in the Morro Bay watershed is used for rangeland, this source contributes an average of 0.5 tons/acre/year of sediment. Roads represent the fourth largest source of sediment in the watershed, contributing approximately 15 percent of the total average annual yield. The Soil Conservation Service (SCS) evaluated a small sample of roads in the Morro Bay for their erosive status and estimated the following erosion rates: non-eroding (28 percent, 0 tons/mile/year), slightly eroding (41 percent, 8

CHORRO VALLEY TRAIL STUDY

Trail Alignments FIGURE 5 FLOOD ZONES



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C (Single Segment)
- Additional Alignment Considered
- Segment Start/Stop

FEMA Flood Zone

- 500-YEAR
- A & AE - 100-YEAR
- AO - 100-YEAR (SHALLOW)
- D - UNDETERMINED (POSSIBLE)
- X - MINIMAL CHANCE

THIS MAP IS NOT A TRAIL GUIDE

This map is a preliminary planning tool and does not constitute an adopted Bicycle or Pedestrian Plan. Many of the routes or staging areas identified on this Map are simply proposed for further study and are not open to the public for any purpose. This map does not convey any right to the public to use any trail routes shown, nor does it exempt any person from trespassing charges.

REFERENCE



Map Sources: Data provided by San Luis Obispo County, Public Works, and Transportation Department, 2014, and ESRI, 2014.



tons/mile/year), moderately eroding (19 percent, 40 tons/mile/year), and severely eroding (12 percent, 157 tons/mile/year). Based on this survey, the majority of road erosion is due to a small percentage of severely eroding unpaved roads.

Cropland is the fifth-largest source of sediment in the watershed, contributing an estimated 11 percent of the total annual average yield. However, considering the relatively small percentage of watershed area used for cropland, this land use has the second-highest yield rate per acre of 1.5 tons/acre/year.

Potential Impacts or Constraints

As noted earlier, up to 15 creek or waterway crossings may be required to implement a continuous Chorro Creek Trail between San Luis Obispo and Morro Bay. Most of these will be bicycle or pedestrian bridges crossing narrow regulatory floodplain areas, although the lower Chorro Creek area has a wider 100-year floodplain. Drainage crossings can introduce a concentrated sediment load to the waterway which can cause a decrease in water quality. Increases in sediment loads to the Morro Bay watershed is a significant concern and therefore a significant constraint in the Chorro Creek watershed. Construction of the Chorro Valley Trail could result in the disturbance of existing waterway conditions by increasing the sediment load to Chorro Creek and altering current hydrologic conditions. Excavated surfaces in areas of high relief can cause accelerated erosion rates if not properly accounted for.

Trails can be located within floodplain areas with much greater flooding frequency (i.e., 10-year floodplain), provided that appropriate considerations are included in the trail and structure designs to prevent frequent and costly trail and bridge damage and washouts, clogged drainage structures, and exacerbated local flooding, or prolonged trail closure. In general, the trail design surface elevation should be a minimum of 1 foot above the 10-yr flood elevation.


Particular attention should be paid towards the design of bridge and boardwalk structures. The bottom cord or structural support member of all bridges and boardwalks within any regulatory floodplain should ideally be at a minimum elevation of Base Flood Elevation plus 2-3 feet of freeboard to be fully compliant with County and FEMA regulations. Each bridge or boardwalk crossing should be designed to have no impact on flood water surface elevations, or block or redirect flood flows to adjacent lands, and clear span the creeks. In addition, there are opportunities to improve existing watershed-wide sediment problems by repairing existing in-channel crossings, eroded roads and other sediment sources with clearspan structures, properly designed trail components, and associated temporary and permanent erosion control structures.

Any new bridge crossing structures in the lower Chorro Creek watershed may need to consider the potential effects of sea level rise on flood water surface elevations.

Mitigation Measures

Structures that cross regulatory floodplains must be designed appropriately, as noted above. In general, the following measures can be implemented to minimize hydrological impacts:

- Retain sediments from creeks on floodplains.



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- Establish a flood warning system and consider trail closures to protect trail users, if severe weather or flooding events are forecast.
- A Stormwater Pollution Prevention Plan (SWPPP) and a Spill Control and Countermeasures Plan (SCCP) should be prepared for each individual trail segment implementation project. Specific measures, as cited below, shall be adapted from the most current edition of the Stormwater Best Management Practice Handbook for Construction, published by the California Stormwater Quality Association (CASQA). The SWPPP shall include Best Management Practices (BMPs) to prevent or minimize stormwater pollution during construction activities, and post construction. The project Erosion Control and Revegetation Plan, and a Spill Control and Countermeasures Plan, should be included in the SWPPP, and in the Construction Documents. BMPs shall be prepared and implemented to control short-term construction-related water quality impacts.
- BMPs shall include at a minimum the following measures:
 - Use temporary measures, such as flow diversion, temporary ditches, and silt fencing or straw wattles.
 - Surface disturbance of soil and vegetation must be minimized; existing access and maintenance roads shall be used wherever feasible.
 - Any stockpiled soil shall be placed, sloped, and covered so that it would not be subject to accelerated erosion.
 - Accidental discharge of all project-related materials and fluids into local waterways shall be avoided by using straw rolls or silt fences, constructing berms or barriers around construction materials, or installing geofabric in disturbed areas with long, steep slopes.
 - After ground-disturbing activities are complete for each area, all graded or disturbed areas shall be covered with protective material such as mulch, and re-seeded with native plant species. An Erosion Control and Revegetation Plan should be prepared by the project Landscape Architect with details regarding site preparation, topsoiling, seeding, fertilizer, mulching, and temporary irrigation.
- The trail should comply with a design-level Hydraulic Investigation report. Proper engineering design of pedestrian bridges and any associated channel modifications should be performed in accordance with the recommendations of a Registered Civil Engineer experienced in hydraulic analysis and design of flood control channels and natural channels.
- A detailed hydraulic analysis should be prepared of all impacted creeks and waterways, with recommendations regarding the design elevations of all pedestrian bridges in compliance with County Flood Control and Water Conservation District floodplain management regulations. This includes 100-year flood elevation freeboard requirements, the locations of the bridge abutment structures with respect to flood flows, bridge abutment, and channel bank protection requirements.
- Design structures within the lower Chorro Creek watershed consistent with projections for sea level rise.

Consistency with Policies

With incorporation of BMPs during land-disturbing activities, the Chorro Valley Trail would be consistent with a goal in the Morro Bay National Estuary Program's Comprehensive Conservation Management Plan to address erosion problems in the upper watershed, including improvements to rural roads (MBNEP, 2013). Likewise, standard design features to reduce erosion along the trail

would be consistent with policy in the Estero Area Plan to slow the process of sedimentation in the Morro Bay Estuary. The proposed trail also would need to be consistent with the Estero Area Plan's combining designation of Flood Hazard (FH) for Chorro Creek, according to which this flood-prone natural drainage course should be maintained in its natural state to protect native vegetation and wildlife habitats. Permitting for any drainage alterations to Chorro Creek or its tributaries would address this requirement.

Conclusion

Drainage crossings can introduce a concentrated sediment load to the waterway which can cause a decrease in water quality. Construction of the Chorro Valley Trail could result in the disturbance of existing waterway conditions by increasing the sediment load to Chorro Creek and altering current hydrologic conditions. Excavated surfaces in areas of high relief can cause accelerated erosion rates if not properly accounted for. For this reason, severe hydrological constraints are identified in Segments 3B and 6B.

Trails can be located within floodplain areas with much greater flooding frequency (i.e., 10-year floodplain), provided that appropriate considerations are included in the trail and structure designs to prevent frequent and costly trail and bridge damage and washouts, clogged drainage structures, or prolonged trail closure. In general, the trail design surface elevation should be a minimum of 1 foot above the 10-yr flood elevation. Particular attention should be paid towards the design of bridge and boardwalk structures. The bottom cord or structural support member of all bridges and boardwalks within any regulatory floodplain should ideally be at a minimum elevation of Base Flood Elevation plus 2-3 feet of freeboard to be fully compliant with FEMA regulations. Each bridge or boardwalk crossing should be designed to have no impact on flood water surface elevations, or block or redirect flood flows to adjacent lands, and clear span the creeks

Geology and Soils

Environmental Setting

The primary source of information on geology and soils, including regional geology, faults, and liquefaction, was the SLO Data Finder. In addition, the State Water Project Coastal Branch (Phase II) Local Distribution lines and Facilities EIR (Chorro Valley Pipeline) completed for SLO County in March 1992 by ERCE was utilized, along with information from the US Geological Survey, California Geological Survey and a site reconnaissance.

Regional Geology. The Trail Study area is located within the southern Coastal Range Geomorphic Province. This province lies between the Central Valley of California and the Pacific Ocean and extends from northern Santa Barbara County to Oregon. The Coast Range province is structurally complex. It is comprised of sub-parallel northwest-southeast trending faults, folds, and mountain ranges.

Study area rock types are made up of mainly volcanic, metavolcanics, and mélanges of serpentinite and greywacke sandstone. These rocks are part of the Mesozoic age Franciscan Complex, are highly

fractured and tectonically sheared. Tertiary age intrusive and extrusive volcanic deposits and the Miocene aged Monterey Formation marine sedimentary deposits are also found in the middle and upper watershed areas in the hills north of the proposed trail corridor. This area's most characteristic geomorphological feature is the series of Tertiary volcanic plugs (volcano remains) that can be seen from Morro Bay southeasterly to the City of San Luis Obispo. These volcanic plugs form the prominent, but separated small peaks of the Chorro Valley and Morro Bay area, including Hollister Peak, Bishop Peak, Cerro San Luis Obispo, Islay Hill, and Morro Rock.

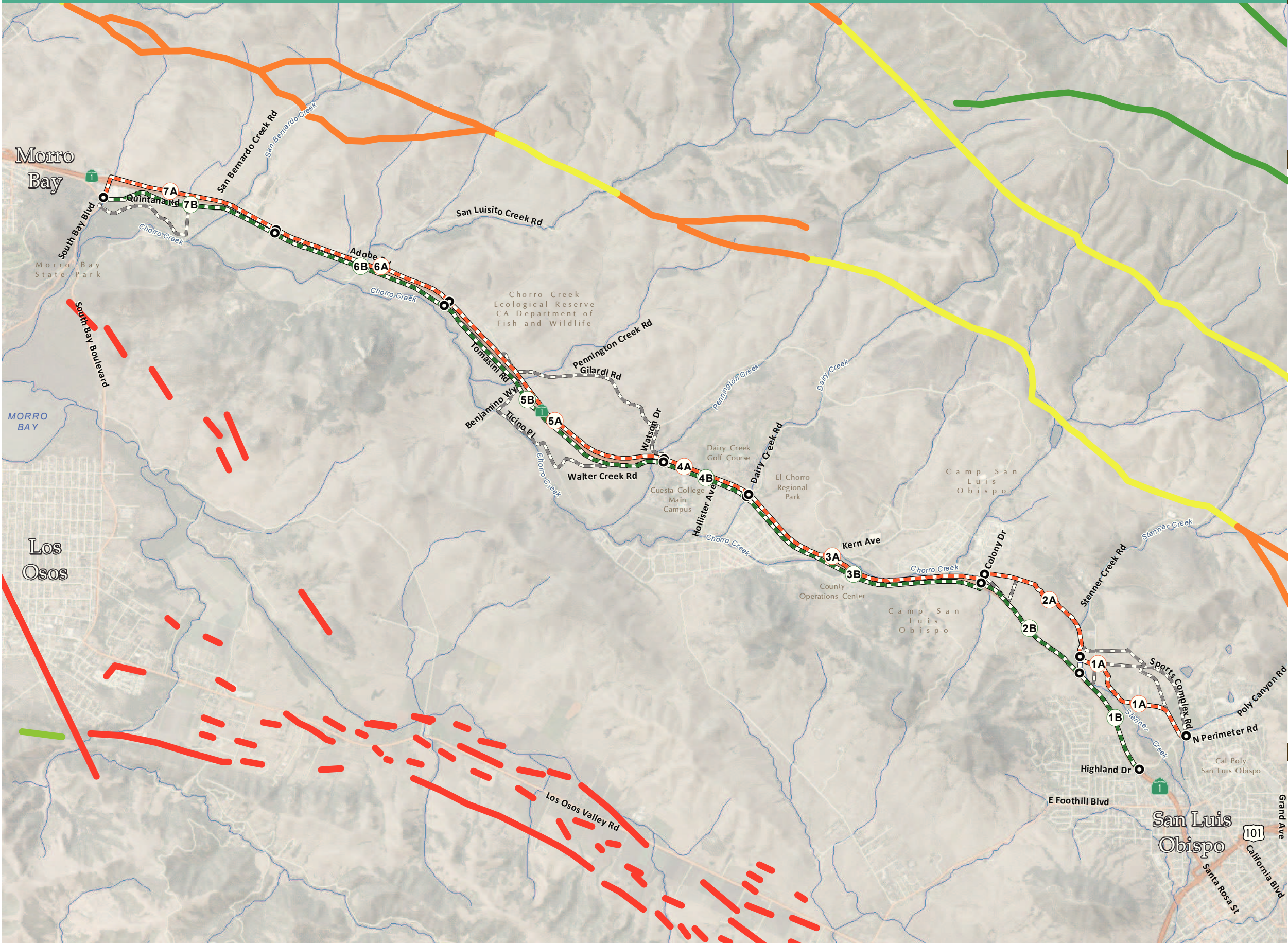
The Coast Range Province northwest-southeast trending structures can be attributed to the San Andreas Fault Transform Boundary, which is characterized by a right-lateral strike-slip fault zone. The movement of the Pacific and North American plates on either side of the San Andreas Fault is the source of many fault ruptures in western California.

Seismicity. The Study area is located in a seismically active region that includes several active earthquake faults. The Hosgri fault zone (5 miles west), part of the San Simeon - Hosgri Fault zone, is located offshore of the planning area. This zone has the potential for earthquakes up to a magnitude of 7.5 on the Richter Scale. The Los Osos Fault (7 miles southwest) runs along the Los Osos Valley at the base of the Irish Hills. It has the potential for seismic events of a magnitude as high as 6.75 on the Richter Scale. The San Andreas Fault zone (40 miles east) has the potential for magnitude 8.5 events. The Nacimiento (10 miles northeast) and Rinconada (20 miles northeast) Fault zones are also located near the planning area, but are considered to have less significant hazard potential.

The U.S. Geological Survey (USGS) and the California Geological Survey (CGS) defines active faults as those that have had surface displacement within Holocene time (approximately the last 11,000 years) (see Figure 6). The existence of cliffs in alluvial terraces, offset stream courses, fault troughs and saddles, the alignment of depressions, sag ponds, and the existence of steep mountain fronts are indicators of recent surface displacement. The San Andreas and Los Osos Faults are the most likely active faults to seismically impact the trail corridor, although neither of these faults are directly located within the study area (Figure 6). Primary earthquake hazards are due to surface fault rupture along the trace of the fault. Secondary earthquake hazards are caused by earthquake induced ground shaking. Ground shaking extends to a wide area and influenced by the distance of the site to the seismic source, soil and bedrock subsurface conditions, and depth to groundwater. Earthquake-induced ground shaking is the greatest cause of widespread damage in an earthquake. Recent seismic hazard modeling efforts have attempted to evaluate earthquake potential for a given area by factoring various potential seismic sources. The anticipated peak ground acceleration for the site area could be up to 0.52g; this could adversely impact structures such as retaining walls and bridges. However, the probability of surface rupture occurring within the Study area is very low. Although the Los Osos Fault is in near proximity to the Study area, there is no evidence of active fault traces in the Chorro Valley.

CHORRO VALLEY TRAIL STUDY

Trail Alignments
FIGURE 6 FAULTS



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C (Single Segment)
- Additional Alignment Considered
- Segment Start/Stop

Earthquake Fault Type

- Inactive
- Capable (Inferred)
- Potentially Capable (Inferred)
- Potentially Capable
- Capable

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REFERENCE



Map Sources: Data provided by San Luis Obispo County, Public Works, and Transportation Department, 2014, and ESRI, 2014.



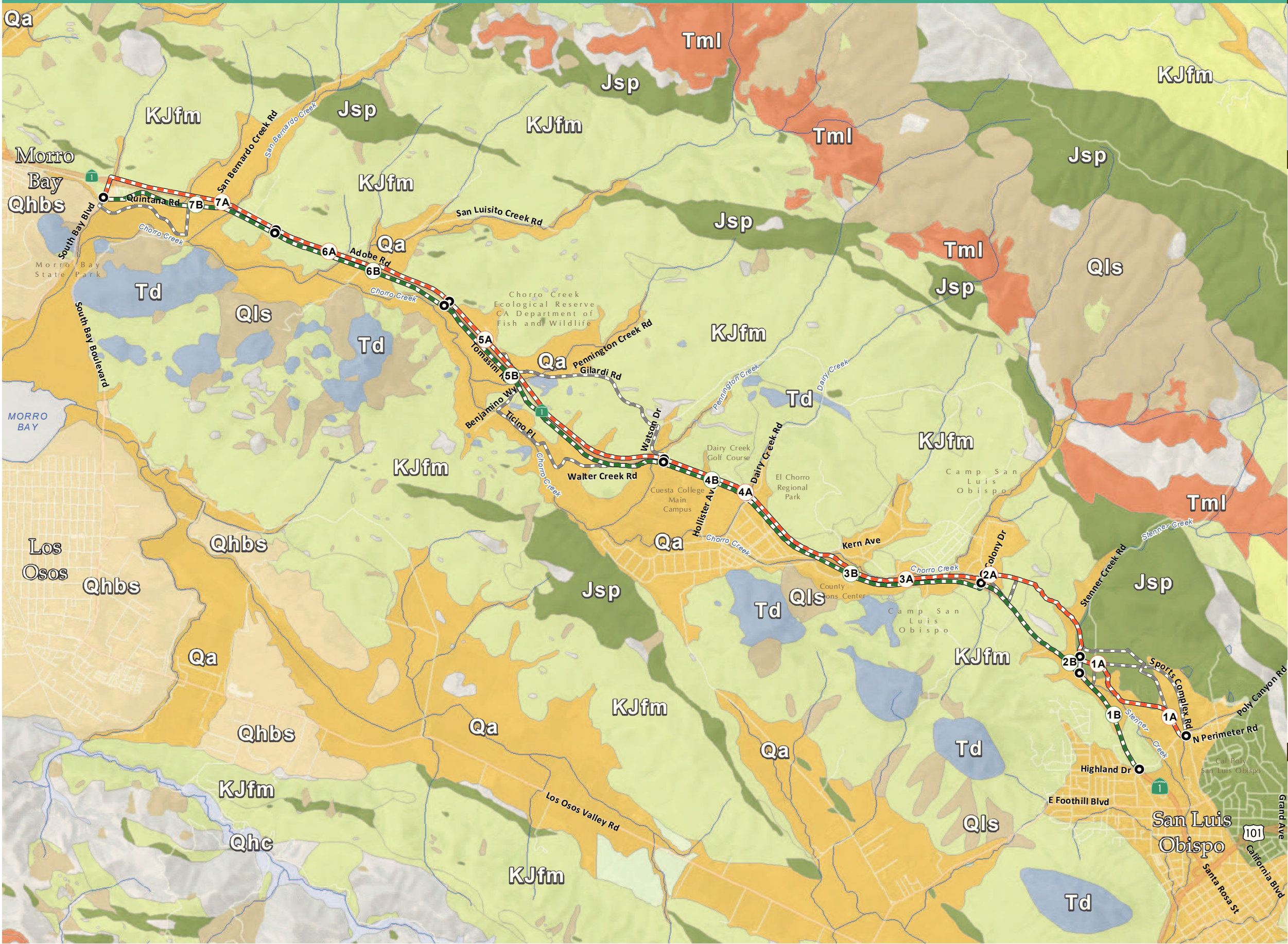
Site Geology & Soils. The Trail Study area is low lying to gently rolling, consisting primarily of alluvial fan and basin deposits, along the valley bottom and Chorro Creek corridor, with generally fractured and weathered bedrock of the Franciscan Complex underlying the low hills at the valley margin. According to the Geologic Map of California, San Luis Obispo, CA created by San Luis Obispo County in 2007, the study area is composed largely of Quaternary age alluvium (unconsolidated deposits of sand, silt, clay, and gravel) along with areas of Franciscan Complex rocks, which form the more prominent hillside areas, including areas with rock outcrops (see Figure 7). The neighboring hills are comprised of the Franciscan Complex, Tertiary Volcanic Rocks, Monterey Formation and Quaternary age non-marine or alluvial terrace deposits.

The United States Department of Agriculture, Natural Resource Conservation Service, Soil Survey for San Luis Obispo County mapped three main soil types within the Study area. These soil types consist of Copley Clays, Diablo Clays, and Salinas Silty Clay Loam. Copley Clays develop on 0 to 9 percent slopes from weathered alluvium derived from sedimentary rocks. These soils form on alluvial fans and plains, are moderately well drained, and are generally over six feet thick. According to the NRCS soils survey, these soils provide generally fair to poor foundation conditions for roadways, trails and trail structures such as bridges due to their low strength, high shrink-swell potential (expansiveness), and difficulty in compacting. Diablo Clays develop on 5 to 9 percent slopes from weathered mudstone, sandstone or shale rocks. These soils form on hills, are typically well-drained, and generally less than six feet thick overlying weathered bedrock. According to the NRCS Soils Survey, these soils are poor construction material due to their low strength, high shrink-swell potential (expansiveness), and difficulty in compacting. Salinas Clay Loams occur on the valley bottom land with 0 to 2 percent slopes; some areas containing this soil are poorly drained and have seasonally high groundwater tables within 2 to 4 feet of the surface, including the area along the Chorro Flats area and Quintana Road. These soils have a moderately slow permeability and are over eight feet thick. Salinas Clay Loams are considered to have low strength and a moderate shrink swell potential.

In general, the soil conditions in the study area are fair for roadway and trail construction purposes. Although there is some potential for active seismicity in the area, it does not pose a significant constraint to trail construction. All of the steeper slopes (slopes greater than 25 percent) are shown as potential landslide risk areas and several of the trail alignment sections being considered traverse areas of risk on hillsides (see Figure 8).

CHORRO VALLEY TRAIL STUDY

Trail Alignments
FIGURE 7 GEOLOGY



LEGEND

- Potential Trail Alignment Alternatives**
- Alignment A
 - Alignment B
 - Alignment C (Single Segment)
 - Additional Alignment Considered
 - Segment Start/Stop

- Geologic Units***
- Qls:Landslide deposits
 - Qnm:Nonmarine Sedimentary
 - Qhc:Stream channel deposits
 - Qhbs:Latest Holocene beach sand
 - Qa:Quaternary alluvium
 - KJfm:Franciscan melange
 - KJt:Toro Formation
 - Jsp:Serpentinite
 - Td:Porphyritic-aphanitic dacite
 - Tml:Monterey Formation

*Due to complexity of geologic variation within map extent, only categories in close proximity to proposed alignments have been depicted.

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REFERENCE

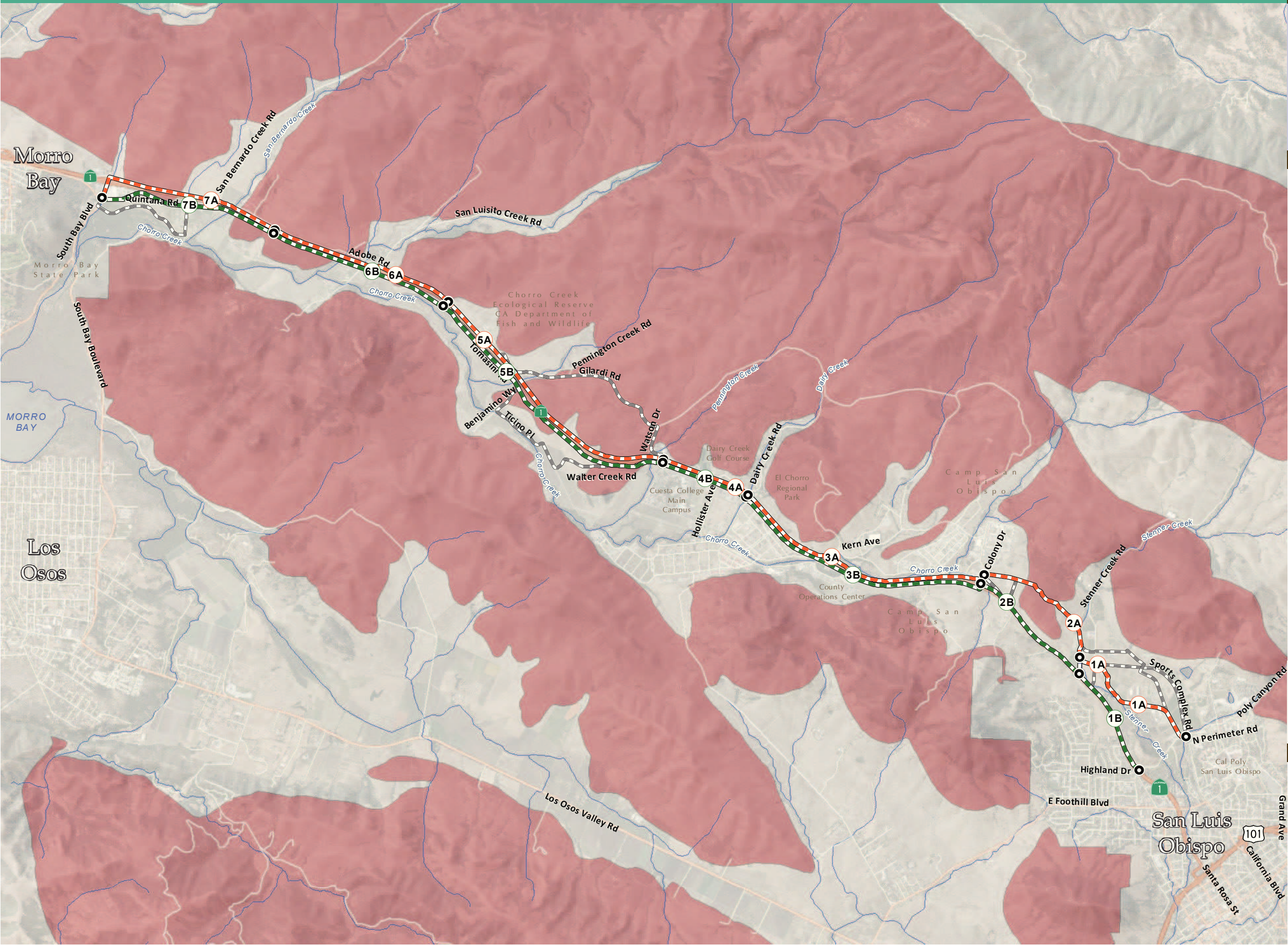


Map Sources: Data provided by San Luis Obispo County, Public Works, and Transportation Department, 2014 and ESRI, 2014.



CHORRO VALLEY TRAIL STUDY

Trail Alignments FIGURE 8 LANDSLIDE RISK



LEGEND

Potential Trail Alignment Alternatives

- Alignment A
- Alignment B
- Alignment C (Single Segment)
- Additional Alignment Considered

Segment Start/Stop

Landslide Risk Areas

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Map Sources: Data provided by San Luis Obispo County, Public Works, and Transportation Department, 2014; California Department of Conservation Farmland Mapping and Monitoring Program, 2010; Caltrans, 2013; Eugene Jud and Cal Poly, 2009; ESRI, 2014.



The detailed geologic mapping completed for the Chorro Valley Water Transmission pipeline project indicated several medium to large landslide masses on the margins of Chorro Valley, however, no landslides were mapped in the immediate study area that affect any of the trail alignments, and none were identified along potential trail alignments during the site reconnaissance. Additional geochemical analysis should be completed during preliminary and final trail design stages, particularly for structures such as bridges, retaining walls and trail grading on moderate to steep slopes.

The lower portions of the study area that have native soils consisting of soft, often poorly consolidated and poorly drained silty clays which provide poor foundation support for trails, bridges and boardwalks. The alluvial fan and basin deposits shown on Figure 7 have low to medium bearing strengths and some areas may be prone to consolidation settlement under loading. These materials may have interbedded sand deposits that are susceptible to liquefaction settlement during earthquake induced ground shaking. However, the San Luis Obispo County liquefaction map (see Figure 9) shows very low to medium susceptibility to liquefaction for the project trail corridor. Several potential trail alignments may traverse areas with moderate to high soil erosion hazards and contain some risk of slope failure. Developing and implementing a well thought out soil erosion control and revegetation program along the trail corridor will also be very important.

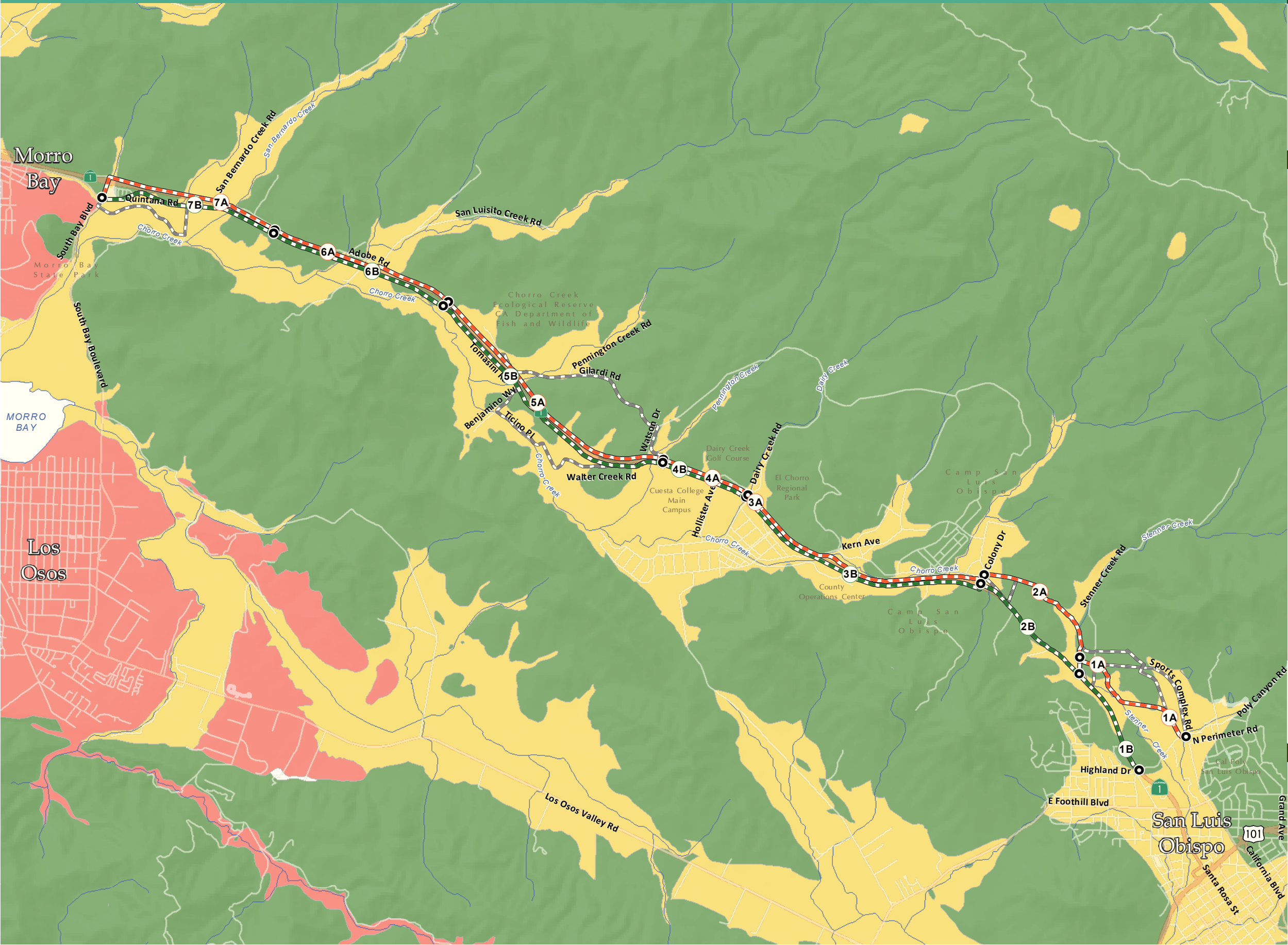
Potential Impacts or Constraints

Potential geotechnical impacts or constraints include slope instability, risk of landslides and potential soil erosion problems associated with trail construction and use. Trails that would be located on moderate to steep slopes, as well as near or crossing creeks or waterways have the highest potential impacts or constraints. The constraints matrix shown below identifies moderate to severe constraints for several segments, including:

- Segment 1A: moderate slopes and risk of erosion
- Segment 1B: steep slopes and high risk of landslides and erosion
- Segment 1C: generally flat slopes with low risk of erosion
- Segment 2A: moderate slopes and risk of erosion
- Segment 2B: steep slopes and high risk of landslides and erosion
- Segment 3A: moderate slopes and risk of erosion
- Segment 3B: steep slopes and high risk of landslides and erosion
- Segment 4A: moderate slopes and risk of erosion
- Segment 4B: moderate slopes and risk of erosion
- Segment 5A: moderate slopes and risk of erosion
- Segment 5B: generally flat slopes with low risk of erosion
- Segment 6A: moderate slopes and risk of erosion
- Segment 6B: generally flat slopes with low risk of erosion
- Segment 7A: moderate slopes and risk of erosion
- Segment 7B: generally flat slopes with low risk of erosion

CHORRO VALLEY TRAIL STUDY

Trail Alignments
FIGURE 9 LIQUEFACTION



LEGEND

- Potential Trail Alignment Alternatives**
- Alignment A
 - Alignment B
 - Alignment C (Single Segment)
 - Additional Alignment Considered
 - Segment Start/Stop
- Liquefaction Potential**
- Very Low
 - Low (no coverage within map extent)
 - Medium
 - Very High

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Map Sources: Data provided by San Luis Obispo County, Public Works, and Transportation Department, 2014; California Department of Conservation Farmland Mapping and Monitoring Program, 2010; Caltrans, 2013; Eugene Jud and Cal Poly, 2009; ESRI, 2014.



Mitigation Measures

The following measures would minimize impacts on geotechnical resources:

- A design-level Geotechnical Investigation shall be prepared for each individual trail segment implementation project under the direction of a California Registered Geotechnical Engineer, or Civil Engineer experienced in geotechnical and foundation engineering. The Geotechnical Investigation shall establish the seismic and geotechnical design parameters, as determined by the geotechnical engineer or civil engineer in accordance with requirements of the California Building Code and applicable San Luis Obispo County Codes. The Geotechnical Investigation shall be reviewed and approved by the County Engineer and by the Project Engineer as part of civil and structural design review of trail grading and drainage structures, retaining walls, under-passes or over-passes, bridges and boardwalks.
- All construction, notably grading and foundation engineering shall be performed in accordance with the recommendations of the Geotechnical Investigation. The design plans shall identify specific mitigation measures to reduce the landslide risk and erosion potential of surface soils.

Consistency with Policies

The study area is not within either an Alquist-Priolo Earthquake fault zone area, nor in an area included in the Seismic Hazards Zoning Act. Provided a detailed Geotechnical Investigation is completed associated with trail design, especially structures, and the final design and implementation is consistent with the Geotechnical Investigation recommendations, California Building Code, Caltrans Highway Design Manual, County Grading Drainage and Building Codes and ordinances, and other applicable regulations, then the project will also be consistent with the San Luis Obispo County General Plan policies addressing geologic and seismic hazards.


Conclusion

With adherence to the above Mitigation Measures that would ensure: trail and public access facility design complies with the requirements of the relevant portions of the California Building Code potential impacts from strong ground shaking associated with earthquake events and slope instability would be reduced to *less than significant*.

Cultural Resources

Environmental Setting

To identify known cultural resources, records of archaeological resources within a 0.5-mile radius of the trail alignments were searched in the California Historical Resource Information System (CHRIS) at the Central Coast Information Center (CCIC) (see Appendix A). In addition, an examination was made of historic maps, the National Register of Historic Places (NRHP), the California Register of



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Historical Resources (CRHR), the California Historical Resources Inventory, and the listing of California Historical Landmarks.

Sixty-nine previously recorded cultural resources were identified within a 0.5-mile radius of the trail corridor. Of these, 17 are located within or directly adjacent to proposed trail alignments or alignments that were considered but rejected. These known cultural resource sites are mapped on an attached, confidential figure (see Appendix B) and listed in Table 6. In this table, “relocated” sites were confirmed by observation in the field.

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Table 6
Cultural Resources Within or Adjacent to Trail Alignments

Site Number	Description	Relationship to Trail Corridor	Status
P-40-168	Habitation site	Within Alignment A	Relocated; Appeared unchanged
P-40-1381/H	Historic artifact scatter	Within Alignment A	Relocated; Appeared unchanged
P-40-1744	Franciscan chert quarry	Within Additional Alignment	Relocated; Appeared unchanged
P-40-1749	Lithic scatter; identified as natural by Applied Earthworks	Within Alignment A	Relocated; appears natural
P-40-1750	Franciscan chert quarry	Within Additional Alignment	Relocated; Appeared heavily disturbed
P-40-1751	Lithic scatter	Within Additional alignment	Relocated; Appeared heavily disturbed
P-40-1752	Lithic scatter; identified as natural by Applied Earthworks	Directly adjacent to Alignment A	Relocated; appears natural
P-40-1793	Multicomponent site; two small historic houses; prehistoric lithic scatter	Within Alignment B	Not relocated due to lack of access
P-40-1800/H	Multicomponent artifact scatter	Within Alignment A	Relocated; Appeared heavily disturbed
P-40-1860	Prehistoric artifact scatter	Within Alignment A	Not relocated due to lack of visibility
P-40-2053	Shell and lithic scatter	Within Alignment B	Not relocated due to lack of visibility
P-40-2055	Multicomponent artifact scatter	Within Alignment A	Relocated; Appeared unchanged
P-40-2129	Lithic scatter	Directly Adjacent to Alignment A	Not relocated due to lack of visibility
P-40-2393	Lithic scatter	Directly adjacent to Additional Alignment	Relocated; Appeared heavily disturbed
P-40-040930	Multi-level wood frame residence	Directly adjacent to Additional Alignment	Not relocated; likely destroyed
P-40-041140	Abandoned segment of Highway 1	Directly adjacent Alignment B	Outside of proposed trail alignment
P-40-041167	Medeiros Dairy	Within Alignment B	Relocated; Appeared unchanged

Source: Appendix A.

Three of the 17 resources within the alignment are historic built environment resources; one is a historic archaeological site; 10 are prehistoric archaeological sites; and three are multi-component,

containing both prehistoric and historic artifacts. Two of these sites (P-40-1749 and P-40-1752) have undergone Phase II investigation (archaeological testing for significance evaluation). Both sites have been reported as natural chert deposits and were recommended ineligible for listing as historical resources. The eligibility of the remaining 15 sites for listing as historical resources is unknown.

As part of the process of identifying cultural resources in the trail corridor, a review of the Sacred Land File was requested of the Native American Heritage Commission (NAHC). The NAHC faxed a response on January 30, 2014 that stated that a search of the SLF “failed to indicate the presence of traditional cultural places in the project site(s) submitted,” but stated that the area is considered culturally sensitive.

Rincon archaeologist Rudy Dinarte conducted an intensive pedestrian survey of most of the trail alignment alternatives on February 10, 11, and 12, 2014. The intensive pedestrian survey did not identify any previously unrecorded resources within the proposed trail alignments.

Potential Impacts or Constraints

The proposed trail represents an opportunity to honor cultural resources through creative interpretive signage that educates trail users about local history and archaeology. Based on the results of the background research and cultural resources survey, the proposed trail also has the potential to adversely affect cultural resources. Grading of trail segments could disturb cultural resources identified within alignments, while the staging of construction equipment could affect cultural resources adjacent to the trail. Because most known cultural sites were observed on the ground surface during the field survey, even shallow ground disturbance could adversely affect these resources. Judging by the location of cultural sites, construction could affect up to eight sites along Alignment A and four sites along Alignment B. However, it is not possible to evaluate the potential significance of impacts, as the CHRR eligibility status of most sites is unknown.

Mitigation Measures

The following measures could be implemented to protect cultural resources in the trail corridor and educate trail users about their importance:

- Interpretive signage consistent with guidelines in the Scenic Byway Corridor Plan should be installed to educate trail users of the cultural history of the Chorro Valley.
- A Phase I report should be prepared for the selected trail alignment, including results from the cultural resources report conducted for the Chorro Valley Trail Study, and a survey of any segment that was inaccessible during the current study.
- Where possible, known cultural resources should be avoided.
- If avoidance is not possible, extended Phase I testing is recommended for resources that are unknown to be within the chosen trail alignment.
- Cultural resources known to be located within the trail alignment should undergo Phase II archaeological testing.
- Construction of the trail should be subject to standard procedures for the protection of unanticipated cultural resources or human resources.

Consistency with Policies

Areawide standards in the Estero Area Plan require that development protect identified sensitive features through building controls, mitigation agreements, easements, or other means. Because the Estero Area Plan does not identify cultural resources within or near the proposed trail alignments, the Chorro Valley Trail would be consistent with policy in this plan.

Conclusion

Based on the location of known cultural resources within the study area, all potential alignments have the potential to affect cultural resources. Potential impacts are mitigable with avoidance of cultural resources or additional testing and reporting on the selected trail alignment. Thus, cultural resources may be considered to pose a moderate constraint to construction of the Chorro Valley Trail.

Hazards & Hazardous Materials

Trail projects can generally result in exposure to hazardous materials in two ways. First, during site grading, construction workers can be exposed to any soil-based contaminants that are released. Second, during operation of a trail, the use of hazardous chemicals on adjacent properties can result in exposure to trail. For example, pesticides applied on adjacent farmland may drift onto a trail corridor.

Environmental Setting


The following databases were searched in February 2014 for known sources of hazardous materials within one-half mile of the proposed trail alignments:

- *The State Water Resources Control Board (SWRCB) GeoTracker database*
- *The Department of Toxic Substances Control (DTSC) EnviroStor database*
- *The Cortese List*

Inactive Sites. The majority of sites listed on the above databases have been successfully remediated or do not pose a risk (i.e. “inactive sites”).

GeoTracker Sites. This database lists five sites that are within one-half mile of the trail corridor with Leaking Underground Storage Tanks that have been remediated. The first site was located at Cuesta College and was remediated for solvents in 1988. The second site was located at the Men’s Colony with diesel as the contaminant of concern and was addressed in 1989. The third site is located off of Kansas Avenue and was contaminated with waste or motor oil. For the final two sites, located at Camp SLO, GeoTracker lists no information in regards to contaminants or affected media. However, these sites are not currently considered to contain hazardous materials.

EnviroStor Sites. The EnviroStor database lists one site within a half-mile of the study area that has been remediated as of 2002. This approximately five-acre site, identified as the proposed



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Mountain View Community School, is located to the south of Highway 1, immediately southwest of the Camp SLO airfield. The proposed school site was contaminated with arsenic, DDD, DDE, and DDT from agricultural operations.

Active Sites. The GeoTracker and EnviroStor databases list two active sites with potentially hazardous materials in the historical 15,000-acre area of Camp SLO. This area includes the current Camp SLO as well as lands deeded to other entities such as Cal Poly, the CMC, and Cuesta College.

One site, listed in the GeoTracker database, is located in the Former Hutment Area near the intersection of Amador Avenue and Humboldt Avenue on the current military base. This site was listed for petroleum contamination in the soil and groundwater. Although this case remains active, the site has been investigated and remediated to below detection levels. All petroleum tanks and piping have been removed.

The EnviroStor database lists a second site within the historical area of Camp SLO as known or suspected to contain military munitions and explosives of concern (unexploded ordnance). According to the most recent update on this site, the status of cleanup activities needed evaluation as of July 2005. The Director of Facilities Planning & Capital Projects for Cal Poly also identified a “firing fan” from historical military use as a potential hazard on the Cal Poly Chorro Creek Watershed Management Area and the Chorro Creek Ecological Reserve (Neel, 2014). However, Camp SLO staff did not identify unexploded ordnance as a potential environmental constraint that would apply to proposed trail alignment through their property (Righello, 2014).

Wastewater Treatment Site. A wastewater treatment facility at the California Men’s Colony is on the Cortese list. However, this site does not contain hazardous materials, as it is listed under a category with the following disclaimer: “This list contains many Cease and Desist Orders and Cleanup and Abatement Orders that do NOT concern the discharge of wastes that are hazardous materials. Many of the listed orders concern, as examples, discharges of domestic sewage, food processing wastes, or sediment that do not contain hazardous materials, but the Water Boards’ database does not distinguish between these types of orders.”

Agricultural Sites. Due to the proximity of cultivated farmland to Segments 1, 2, 6, and 7, the presence of pesticides represents a potential health risk in the study area. The U.S. EPA defines pesticide spray drift as the physical movement of a pesticide through air at the time of application or soon thereafter, to any site other than that intended for application. Spray drift occurs when nozzles on groundspray equipment produce small droplets that stay suspended and are carried by air currents to off-target locations. The degree of health hazard from spray drift depends on factors such as the proximity of sensitive receptors to the area of pesticide application, the amount of spray drift, and the toxicity of the pesticide.

Potential Impacts or Constraints

Based on the status of sites listed on the EnviroStor and GeoTracker databases and included on the Cortese list in the vicinity of the study area, it is unlikely that already known hazardous conditions would affect the Chorro Valley Trail. Among the listed active sites, the Former Hutment Area has been successfully remediated, and unexploded ordnance represents an extremely unlikely hazard because of its dispersed character and the location of the trail alignments almost entirely within

previously graded or paved areas. Exposure to chemicals from agricultural operations also is a potential impact for trail users, especially near cultivated farmland along Segments 6B and 7B.

Mitigation Measures

The mitigation measure listed under Agricultural Resources for Notice of Agricultural Activities would serve to reduce potential impacts from exposure to pesticides.

Consistency with Policies

The County's Safety Element, as adopted in 1999, contains policies relevant to hazardous materials. Policy S-26 (Hazardous Materials) is to "reduce the potential for exposure to humans and the environment by hazardous substances." Policy S-27 (Pesticide Hazards) is to "reduce the potential for pesticide exposure to humans and the environment." The proposed trail would be consistent with these policies because it would not result in exposure of trail users to substantial adverse health effects from listed hazardous material sites or (with mitigation incorporated) from agricultural chemicals.

Conclusion

Impacts related to hazardous materials would generally be minimal on the potential trail alignments. Near agricultural operations, exposure of trail users to pesticides represents a moderate but mitigable constraint. Alignments located at a greater distance from cultivated farmland would have minimal constraints from agricultural hazards.

Other Environmental Issues

Aesthetics

In 2003, the Federal Highway Administration designated the Highway 1 corridor between the San Luis Obispo city limits and the northern San Luis Obispo County Line as a scenic byway (SLOCOG, 2007). This designation is reserved for public roads having special scenic, historic, recreational, cultural, archaeological, and/or natural qualities (Federal Register, 1995). Within the Chorro Valley, the San Luis Obispo North Coast Byway along Highway 1 provides scenic views of five morros (volcanic peaks) to the south, agricultural and pasture lands, and the Santa Lucia Mountains to the north (SLOCOG, 2007; San Luis Obispo County, 2003). One of the primary goals of the Scenic Byway Corridor Plan is to maintain and enhance scenic viewsheds, such as the Chorro Valley. Federal guidance for scenic byways supports this goal, stating that “the highest levels of visual integrity and attractiveness” should be preserved (Federal Register, 1995). The majority of evaluated trail segments are located along Highway 1, and construction of these segments could have temporary impacts on scenic views; however, Segments 1A, 2A, 5B, and 7B are generally out of the line sight of motorists on Highway 1 and would not affect scenic views.

The Estero Area Plan also designates the chain of morros as a Sensitive Resource Area that forms a spectacular scenic backdrop to Highway 1 (San Luis Obispo County, 2003). One of the morros in particular, Hollister Peak, looms on the south side of Highway 1 near the Chorro Creek Ecological Reserve and is a major visual element in the scenic byway (MBNEP, 2005). The Sensitive Resource Area covers Hollister Peak, Cerro Cabrillo, and associated hills from the tops of these peaks, hills and connecting ridges down to the 300-foot elevation. Land Use Policy 6 in the Estero Area Plan is to protect scenic vistas of the morros.

Aside from the prominent morros, the visual character of Chorro Valley is primarily characterized by rolling agricultural lands and riparian corridors along Chorro Creek and its tributaries. Urban uses are clustered in the eastern portion of the study area, including the California Men’s Policy, Camp SLO, the County Operations Center, and Cuesta College. El Chorro Regional Park also has conspicuous active recreation facilities such as sports fields and picnic areas (San Luis Obispo County, 1993).

Air Quality

San Luis Obispo County is currently in attainment of all National Ambient Air Quality Standards (NAAQS), with the exception of a May 2012 designation of marginal non-attainment of the eight-hour ozone standards for the eastern portion of the County (SLOAPCD, 2013). Thus, the Chorro Valley area is in attainment of all NAAQS. However, the California Ambient Air Quality Standards (CAAQS) are generally more restrictive than the national standards. Accordingly, the County is designated as a non-attainment area for the state one-hour (90 ppb) and eight-hour (70 ppb) ozone standards, as well as the state 24-hour (50 micrograms/cubic meter) and annual (20 micrograms per cubic meter) PM₁₀ standards. State and national standards for NO₂ have never been exceeded in the County, while state standards for carbon monoxide have not been exceeded in the County since 1975.

Greenhouse Gas Emissions

In November 2011, San Luis Obispo County published a climate action plan which inventoried greenhouse gas emissions in unincorporated areas such as the Chorro Valley, set targets for reducing emissions, and listed specific measures to achieve the targets (San Luis Obispo County, 2011). The inventory found that the unincorporated County community emitted 917,700 metric tons of carbon dioxide equivalent in 2006, with the largest share (40 percent) from transportation. Commercial/industrial energy use and residential energy use were the next largest contributors, with 24 percent and 15 percent of overall emissions, respectively. The County committed to reducing community-wide greenhouse gas emissions from land use and transportation 23 percent below 2006 baseline levels by the year 2020. To that end, the County adopted a measure to improve access to community-wide pedestrian and bicycle networks by removing barriers and providing additional bike- and pedestrian-oriented infrastructure. A supporting action for this measure is to support SLOCOG and local cities in the implementation of bicycle and pedestrian master plans to facilitate non-auto travel within and between communities.

Mineral Resources

A wide variety of mineral resources are found in the County, although few are presently being extracted commercially, according to the Conservation and Open Space Element Appendix of the County's General Plan. Sand and gravel remain principal mineral resources in the County. As shown in Figure MN-2 in the Conservation and Open Space Element, no extractive resources areas are located in the Chorro Valley (San Luis Obispo County, 2010). Based on observation of the potential trail alignments, the Chorro Valley Trail would not affect active sites for the extraction of mineral resources.

Noise

In the largely rural location covered by the Estero Area Plan, roadways serve as the primary sources of noise (San Luis Obispo County, 2003). Within the Chorro Valley, high-speed traffic on Highway 1 is the predominant noise source. The County's Noise Element, adopted in 1992, projected noise contours for segments of Highway 1 for the year 2010. Between Highland Drive and the South Morro Bay interchange, motorized traffic on Highway 1 was projected to generate the following noise contours: 70 decibels L_{dn} at a distance of 139 feet from the roadway's centerline, 65 decibels L_{dn} at a distance of 299 feet, and 60 decibels L_{dn} at a distance of 644 feet (San Luis Obispo County, 1992). The unit L_{dn} refers to a 24-hour noise level weighted toward nighttime noise.

Population/Housing

The Chorro Valley is a sparsely populated, rural area. In proximity to the trail corridor, the California Men's Colony provides secure housing for minimum and medium security inmates. As of 2009, the Men's Colony had a population of 6,586 inmates (California Department of Corrections and Rehabilitation, 2009). In addition, Camp SLO has more than 1,000 structures (houses, apartments, and two-person "hutments") that can support a troop population of more than 2,000 under normal conditions and more than 3,500 under emergency conditions (Camp SLO, 2001). Several residences on agricultural properties also are located near the trail corridor.

Public Services

In the unincorporated portions of the Estero planning area, the California Department of Forestry (CDF) is responsible for preventing and controlling wildland fires and providing emergency medical assistance (San Luis Obispo County, 2003). CDF acts as the County Fire Department by contract with the County. The San Luis Obispo County Sheriff's Department provides police protection services for the Estero area. Patrol services for the Chorro Valley are provided primarily through the Sheriff's substation located in Los Osos. Other services, including investigative and emergency dispatch services, are provided through the county operations center on Kansas Avenue. In addition, the California Highway Patrol (CHPO) covers Highway 1. The San Luis Coastal Unified School District (SLCUSD) encompasses Chorro Valley. In total, SLCUSD has 15 preschool-12th grade schools which serve nearly 7,200 students (SLCUSD, 2014). Public higher education is provided at Cuesta College, a community college located in the central portion of the trail corridor.

Recreation

The study area is located in proximity to important recreational resources. El Chorro Regional Park, a County park which borders Segments 2 and 3 to the north, provides opportunities for both active and passive recreation. The park includes campsites, a public golf course, botanical gardens, volleyball courts, softball fields, and hiking trails, among other amenities. The western end of the study area, at the intersection of Quintana Road and South Bay Boulevard, also is near the northern boundary of Morro Bay State Park, where visitors can engage in sailing, fishing, hiking, and birding, and stop at a museum of natural history.

Constraints Matrix

Based on the assessment of existing environmental conditions in the study area, the following matrix was developed to illustrate the degree of environmental constraints with regard to building the proposed Chorro Valley Trail. The matrix is organized by potential trail alignment, segment, and environmental issue. As shown in the matrix, the color red represents a severe constraint, while yellow stands for a moderate constraint, and green refers to a minimal constraint or no constraint. The preceding discussions of environmental issues include explanations of the degree of constraints assigned to each segment.

Environmental Constraints									
Segment/ Alignment	Visual Resources	Agricultural Resources	Biological Resources	Cultural Resources	Geology/ Soil	Hazardous Materials	Hydrology	Land Use Conflicts	Traffic Safety
1A	Green	Yellow	Yellow	Yellow	Yellow	Green	Green	Red	Yellow
1B	Yellow	Yellow	Yellow	Yellow	Red	Green	Yellow	Yellow	Red
1C	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Yellow	Yellow
2A	Green	Red	Red	Yellow	Yellow	Green	Yellow	Red	Yellow
2B	Yellow	Yellow	Yellow	Yellow	Red	Green	Yellow	Yellow	Red
3A	Yellow	Green	Red	Yellow	Yellow	Green	Yellow	Red	Yellow
3B	Yellow	Green	Red	Yellow	Red	Green	Red	Yellow	Red
4A	Yellow	Green	Yellow	Yellow	Yellow	Green	Yellow	Green	Green
4B	Yellow	Green	Yellow	Yellow	Yellow	Green	Green	Green	Green
5A	Yellow	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow	Red
5B	Green	Yellow	Yellow	Yellow	Green	Green	Green	Yellow	Green
6A	Yellow	Red	Yellow	Yellow	Yellow	Green	Yellow	Red	Red
6B	Yellow	Red	Red	Yellow	Green	Yellow	Red	Red	Red
7A	Yellow	Yellow	Red	Yellow	Yellow	Green	Yellow	Yellow	Red
7B	Green	Red	Red	Yellow	Green	Yellow	Yellow	Red	Yellow

Permits and Regulatory Approvals Needed

The proposed project requires the certification of this EIR and approval of the Master Plan by the RTC prior to the initiation of the project. In addition, the following discretionary approvals from other agencies may be required prior to construction of individual segments:

- *Coastal Development Permit(s) from the County of San Luis Obispo or California Coastal Commission (west of Cuesta College);*
- *Section 404 Permit(s) from the U.S. Army Corps of Engineers;*
- *Section 1600 Streambed Alteration Agreement(s) from the California Department of Fish and Wildlife;*
- *Section 401 Water Quality Certification from the Regional Water Quality Control Board; and*
- *Caltrans Encroachment Permit(s).*

In particular, alterations to the bed, banks, or riparian corridor of Chorro Creek and its tributaries may require a Streambed Alteration Agreement (Section 1600 Agreement).

Furthermore, if individual segments proposed for implementation encroach onto properties managed by other entities, approvals may also be required by these entities. Agencies and institutions that may have discretionary approval authority include, but are not limited to: Cal Poly, the California Department of Corrections and Rehabilitation, the California Department of General Services (for a segment on Camp SLO), Caltrans, and/or the California Department of Fish and Wildlife.

If and when a master plan for the Chorro Valley Trail is developed, programmatic environmental review under CEQA would be required. Subsequent environmental review also may also be required for project involving the construction of individual segments of the Chorro Valley Trail, particularly if such a segment differs from what was analyzed programmaticaly. In such instances, the initial CEQA document may be used as a tiering document, as described in Section 15152 of the *CEQA Guidelines*. Subsequent review, if required, may include a Negative Declaration, Mitigated Negative Declaration, EIR Addendum, or site-specific Project EIR.

Review under the National Environmental Policy Act (NEPA) may also be required for individual segments, if the segment is funded whole or in part by federal funds. NEPA review could be as simple as a Categorical Exclusion, unless certain criteria are met. For example: (1) significant environmental impacts; (2) substantial controversy on environmental grounds; (3) significant impact on properties protected by section 4(f) of the DOT Act or section 106 of the National Historic Preservation Act; or (4) inconsistencies with any federal, state, or local law.

Summary

As discussed in the Introduction, the proposed Chorro Valley Trail could cross multiple institutional and public properties. Implementation of the trail would depend on the consent of these landowners and conformance with their policies. In addition, the western portion of the study area includes private farmland. In the Constraints Matrix, the Land Use Conflicts column displays the potential conflicts with policies and operations of these landowners.


Most importantly, the Chorro Valley Trail would generally improve safety conditions for cyclists relative to existing conditions, by enabling them to ride off of Highway 1. This physical separation of high-speed motorized vehicles and cyclists would reduce the risk of collisions. On the shoulder of Highway 1, hazards would remain severe without the installation of barriers to separate cyclists from motorized vehicles. Construction of the trail also would bring opportunities to enhance biological resources in riparian areas and install interpretive signage consistent with Scenic Byway policies that educates trail users of local biological resources and natural features.

Environmental constraints are localized and vary in severity from segment to segment. Where trail alignments cross or abut agricultural lands owned by Cal Poly or private interests, conflicts could arise with agricultural operations. Site-specific design in certain places would be necessary to avoid conflicts with utility infrastructure. In addition, mitigation would likely be required to protect listed species near the trail and to prevent additional sedimentation in the Chorro Creek watershed from new drainage crossings. Further study of geological and soil constraints is important to identify areas prone to slope instability, landslides, and erosion, and to recommend appropriate mitigation.

Finally, upon selection of a preferred trail alignment, further refinement of the trail's location may be needed during precise planning and design, based on the availability of right of way, cost, and continuing discussions with property owners and stakeholders.

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